



# **FIVE-YEAR PLAN**

FOR THE

## **WASTE TIRE RECYCLING MANAGEMENT PROGRAM**

(4th Edition Covering Fiscal Years 2007/08–2011/12)  
Report to the Legislature



July 1, 2007  
Board-Approved Version

Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

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## Executive Summary

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Scrap and waste tires pose a serious health and safety threat and a severe environmental hazard in California. When tires are stockpiled or illegally dumped and left unmanaged, these waste tires may lead to toxic materials leaching into the ground or create a breeding ground for disease-carrying rodents and mosquitoes. They may also create a potential environmental disaster as seen in 1990s, when California witnessed two of the largest environmental traumas to ever threaten the Golden State. And, Californians will purchase almost 200 million tires over the next 5 years, increasing the threat waste tires bring to our environment if they are not properly managed.

However, as technologies improve and political will expands the proper management of waste tires is increasing and better and more efficient uses for tires are becoming available. Waste tires are quickly becoming seen as a resource that can not only be used in place of virgin materials but also as a means to reduce dependency on foreign oil, build our economy and provide solutions to engineering obstacles.

The California Integrated Waste Management Board's (CIWMB) Waste Tire Recycling Management Program (Tire Program) has been at the forefront of expanding research and development of waste tire technologies and programs and continues to improve and build on its successes. Since 1990 when waste tire diversion was only 34 percent, the Waste Tire Program has increased diversion in California to 75 percent in 2005. Through proper implementation, sound science and measurable results, CIWMB and the Tire Program are developing the tools necessary to continue to address California's waste tire needs.

Great strides have been made in expanding the statewide enforcement infrastructure through its grants to local government enforcement entities, who in turn are becoming more sophisticated in their approach to local tire issues. The CIWMB set a goal of increasing waste tire enforcement grantee coverage in the State to 80 percent by 2008. Currently, these local enforcement grantees cover 79 percent of the state's tire sites and related businesses. Additionally, the CIWMB has far surpassed its goal of increasing State inspections in local jurisdictions without grantees by 50 percent by 2008. Inspections have increased 1045% from 124 in fiscal year (FY) 2003/04 to 1420 in FY 2005/06.

Enforcement is keeping up with technology in California as the CIWMB is beginning to use sophisticated techniques such as satellite technology and motion activated cameras to identify waste tire piles and to catch people illegally disposing of waste tires. The California Highway Patrol (CHP) is working in partnership with the CIWMB to stop illegal hauling and stockpiling of waste and used tires. Part of these combined efforts will focus on the border region<sup>1</sup> between California and Mexico.

The Board's Enforcement Staff and Legal Office are working cooperatively with local district attorneys to hold those individuals who break California's waste tire laws accountable for their action either through fines or with criminal penalties. These local and state government tire enforcement authorities are helping to ensure that the stockpiling of waste tires never becomes a problem again.

In an effort to better enforce California's laws, the Waste Tire Hauler and Manifest Program has been redesigned to be simpler and more effective for those using the system. These revisions to the waste tire manifest program have improved our ability to track the flow of tires, while simplifying and reducing the cost to stakeholders for manifesting and tracking tires as it begins to move into an electronic data transmission format. Furthermore, the CIWMB established hauler penalties and manifest requirements for the retread industry, which also improved the process.

<sup>1</sup>*Border Region refers to the area situated 100 kilometers on either side of the inland and maritime boundaries between Mexico and California. As sited in the Mexico and United States of America Agreement on Co-Operation for The Protection and Improvement of The Environment in The Border Area signed on August 14, 1983.*

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The CIWMB is proud of the accomplishments made in cleaning up previous environmental disasters. Remediation efforts at California's last large tire fire site, the Royster stockpile in Tracy, were completed in 2005 as anticipated and the Department of Toxic Substance Control certified the Westley site as clean in early 2007. The CIWMB's efforts surrounding the Sonoma waste tire sites (the largest known remaining stockpiles with a cumulative total of over one million tires) have resulted in five of the eight Sonoma County sites being remediated while the remaining Sonoma sites are anticipated to be remediated in 2008. The Remediation Program continues to work with local jurisdictions to clean up any known piles through the Waste Tire Cleanup and Farm and Ranch Abatement grants. The enhanced enforcement and surveillance efforts will help identify any remaining tire piles in the State.

Creating expanded and new markets for recycled tire material is crucial for the advancement of waste tire diversion and local jurisdictions play a significant role in California through many efforts. The Board has taken great strides to ensure that the local jurisdictions are educated and informed about all the Board has to offer for recycled content materials such as rubberized asphalt concrete (RAC) and tire derived aggregate (TDA).

The Board's outreach program to local governments has shown success in providing local jurisdictions the opportunity to apply for RAC grants or gain further knowledge on TDA and other recycled materials. In fact, RAC grants have increased significantly and in fiscal year 2005/06 and 2006/07, the Board has awarded over \$8.9 million in grants to first time users. The Tire Program will also work closely with the Grants Administration Unit and the Legal Office to identify procedural improvements for all tire grant programs. The CIWMB's goals for tire product programs are to: 1) increase the purchase of RAC, TDA, and tire-derived products (TDPs); 2) make the application simple, 3) and to guarantee that grants are administered in the most fiscally responsible manner possible.

Just as local governments play a role in the overall reduction of waste tires, so too must other State Agencies. The CIWMB has partnered with the California Department of Transportation (Caltrans) on several highway projects in which shredded tires were used as lightweight fill. These projects included the Dixon Landing/I-880 interchange project (Santa Clara County) and two retaining wall projects: the Route 91 project in Riverside County, which used 84,000 tires as TDA; and the Wall 207, Highway 215 project, which used 250,000 tires as TDA. The success of these projects prompted Caltrans to issue a letter to its district directors stating that the use of tire shreds has proven to be an economically feasible alternative where conditions warrant the use of lightweight fill. In fact, this letter dated January 27, 2005, specifically said, "Districts shall consider tire shreds as a first option when lightweight fills are recommended for projects. After economic and technical analysis, if tire shreds are not selected then those reasons shall be documented..."

In another civil engineering application, the CIWMB partnered with the Valley Transportation Authority (VTA) in San Jose to investigate the use of TDA as a vibration-dampening material in VTA's light-rail system. The results of this investigation were very favorable, so VTA used 100,000 tires as TDA in 2,000 feet of light-rail section along its Vasona Line expansion that was completed in 2004. This resulted in significant cost savings because conventional technology for vibration mitigation costs \$500 per foot, whereas TDA costs only \$150 per foot.

And, as state and local government entities make buying tire-derived products a normal part of doing business, the CIWMB will begin working with 'big box' stores to help make more TDPs (like rubberized mulch) available to California's consumers, expanding even further markets for recycled tire materials.

As the State's tire-related industries begin to thrive and sustainable markets are created, a vision of a future with virtually all waste tires being recovered for higher and better uses comes into focus. However, tire and auto manufacturers and dealers can play a key role in the continued success of both national and international programs through product stewardship efforts. Tire processors and tire product manufacturers are crucial to bridging the gap between waste tires and marketable products. Pursuant to the Board's Strategic Directive 5: Producer Responsibility Directive, the CIWMB will work in conjunction with industry stakeholders, local governments, other state agencies, tire manufacturers, and



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the general public to help foster a cradle-to-cradle tire-derived material management approach including producer responsibility that develops long-term solutions that can be sustained.

Many tire retailers are beginning to demonstrate their commitment to waste tire reduction as well by partnering with the State in educational outreach promotions. Retailers are providing material to their customers that educate them on proper tire care and maintenance as well as how the public can contribute to by buying longer-lived tires. Eventually, private businesses and the public will help sustain and expand the market by purchasing tire-derived products. In fact, the public is being encouraged to be a part of California's solutions even more, through the implementation of the Local Government Amnesty Grants that offer California's residents an opportunity to bring in old tires stored in their garages or around their property.

The Waste Tire Business Assistance Program (BAP) is currently working with a wide range of waste tire related businesses to build a sustainable market for tire-derived products in California. This innovative program was designed to build an effective statewide infrastructure that will be able to respond to the ebbs and flows of a changing market through production management and product diversification. The program goes well beyond the former Tire Product Commercialization and Applied Technologies Grant Program, which was limited to providing funds for equipment purchases only. The BAP program offers a wide range of business services that are custom tailored to each individual business. These services may include: 1) technical and consultative assistance for business plans and operations, marketing efforts, and testing and certification of new products; and 2) reimbursement for specifically identified equipment.

Over the years, the CIWMB has commissioned numerous research projects and studies concerning a wide variety of tire related issues. The results of these studies have helped stakeholders and the CIWMB develop strategies for mapping out the Waste Tire Recycling Management Program's future. These studies have examined markets for steel and fiber residue from tire processors; the economic viability of pyrolysis, liquefaction, gasification, and devulcanization; the use of recycled-content rubber in new tires; health effects of waste tires in playground and track products; specifications for RAC; and a number of civil engineering applications. This research is crucial for the development of new technologies and new programs that will allow California to lead the nation in waste tire reduction.

Two research projects of note, the Border Tire Flow Study and Estimating Annual Waste Tire Generation in California, will be published in early FY 2007/08. The first study will assist the CIWMB in better understanding how many waste and used tires are exported to Mexico annually and any possible environmental and economic impacts. The results from the second study will be used to validate data that the CIWMB receives from other sources and will also provide the basis for developing a model that can be used to predict, for example, how changes in tire size or tire longevity can impact generation rates. Another planned study will look more closely at the economic and environmental impacts of California exporting used tires into Mexico, and possible mitigation efforts.

While California's local government enforcement grantees cover 79 percent of tire sites, effectively addressing all enforcement issues on a statewide basis continues to be a concern. CIWMB staff must work closely with local jurisdictions by providing training and oversight to assure continued success. Until tires truly become a commodity that flows directly into everyday commerce, the CIWMB must oversee the manifesting and tracking of used and waste tires flowing within the State.

The Waste and Used Tire Hauler and Manifest Programs have been very successful in assuring that waste tire haulers are properly registered and manifesting each transaction. Program staff has worked closely with the CIWMB legal staff and local government enforcement entities to enforce waste tire statutes and regulations fairly and consistently. However, to help owners and operators of waste tire facilities and haulers comply with the law; the CIWMB provides extensive outreach and training (in both English and Spanish) throughout California and in the border area of Mexico as many old tires are dumped or piled in low-income and/or minority rural and urban settings, such as reservations, rancherías, and communities along the California-Mexico border, raising environmental justice issues.

Though a series of workshops, the CIWMB developed a Comprehensive Trip Log (CTL) to take the place of the more burdensome Manifest Form that was originally used. The CTL not only makes completing the form easier, it offers the opportunity to provide the required information electronically, which saves time, paper, and staff resources. Now that Electronic Data Transfer (EDT) has taken hold, the CIWMB is investigating the use of hand held devices for haulers to use to scan primary data through a bar code. As more haulers use EDT and hand held scanners, tracking the flow of waste and used tires will become much easier for stakeholders and CIWMB staff as well.

The CIWMB not only tracks tire flow in the State in general, it surveys tire-related businesses to determine what happens to used and waste tires with respect to reuse, recycling, and disposal. The latest tire industry survey showed that Californians generated about 1.1 waste tires per person in 2005, or 40.8 million\* waste tires. Approximately 30.6 million of these waste tires were diverted to productive end uses. However, this means that about 10.2 million would still have to be diverted to completely eliminate the waste tire problem. The diversion amounts and categories from the California Waste Tire Generation, Markets, and Disposal: 2005 Staff Report are below.

### Number of California Waste Tires Diverted From Disposal, 2005

(Millions of Passenger Tire Equivalents)

Reuse	1.2	ADC <sup>1</sup>	4.7	Retread	4.4
Crumb Rubber		Civil Engineering		TDF	
-Rubber Products (3.2)	5.2	Landfill Applications	2.0	- Co Gen (1.7) <sup>3</sup>	9.1
-RAC (2.0)				-Cement (7.4) <sup>4</sup>	
Other Recycling Uses <sup>2</sup>	3.2	Exported	2.3	Imported <sup>5</sup>	(1.5)
				<b>Total Diverted</b>	<b>30.6</b>

<sup>1</sup> Alternative Daily Cover

<sup>2</sup> Other uses include recycling applications (does not include any crumb rubber products) for waste tires like roofing shingles, sandals, weights, and agricultural uses.

<sup>3</sup> TDF (Tire-Derived Fuel) combusted in power plants.

<sup>4</sup> TDF combusted in kilns for making cement.

<sup>5</sup> Imported tires are subtracted from the other diversion categories to make the total diverted accurate for California.

In light of these great opportunities and formidable challenges, Board members, stakeholders, and CIWMB staff has focused on expanding the strategy found in the last biennial revision (adopted May 11, 2005) of the *Five-Year Plan for the Waste Tire Recycling Management Program (Five-Year Plan)*.

This new expanded strategy, presented in this new revision, has the following program priorities:

1. Work with stakeholders to create a strong and vibrant tire-derived business infrastructure that can support a sustainable market for all tire-derived products.
2. Promote the use of rubberized asphalt concrete particularly at the local level.
3. Work closely with State and local public works departments to expand and diversify the use of Tire-Derived Aggregate for civil engineering applications.
4. Promote the purchase of other existing tire-derived products and work closely with industry to create new products that will help divert waste tires from landfilling.
5. Work with tire manufacturers, retreaders, and dealers to assure that: 1) new tires last longer; 2) retreaded tires are purchased by a wider range of consumers; and 3) dealers help teach consumers about proper tire maintenance and leaving their old tires at the dealership for proper management.
6. Expand the statewide enforcement and surveillance program through cooperative efforts with local and State enforcement agencies.

\* Appendix C contains the report, *California Waste Tire Generation, Markets, and Disposal: 2005 Staff Report*.



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7. Clean up and remediate the remaining tire piles identified through surveillance and enforcement programs.
8. Work closely with CalEPA and the appropriate Mexican authorities to implement the directives outlined in Senate Bill (SB) 772 (Ducheny, Chapter 214, Statutes of 2005).

To measure the effective implementation of these priorities, the CIWMB has established the following goals:

- Increase the annual waste tire diversion rate to 90 percent by 2015.
- Conduct inspections according to statutory requirements and ensure that 100 percent of facilities are in compliance or under compliance orders by 2009.
- Eliminate all identified illegal tire piles by 2010.
- Reduce the number of tires generated by Californians from the current 1.1 to 0.75 per person per year by 2015.

The ultimate measure of success will be how well these program activities divert waste tires to the highest and best use, and how effective enforcement and surveillance programs protect human health and the environment. This fourth edition of the *Five-Year Plan* presents the following budget for CIWMB's Tire Program for FY 2007/08–2011/12.

**Table 1: Total Tire Program Funding for Fiscal Years 2007/08–2011/12**

Program Areas	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12	Totals for All Fiscal Years
Enforcement	\$9,305,458	\$9,305,458	\$9,405,458	\$9,455,458	\$10,155,458	<b>\$47,627,290</b>
Cleanup*	\$5,032,178	\$4,632,178	\$5,032,178	\$4,532,178	\$4,532,178	<b>\$23,760,890</b>
Research	\$2,043,839	\$943,839	\$843,839	\$1,493,839	\$843,839	<b>\$6,169,195</b>
Markets	\$18,371,321	\$14,996,321	\$14,596,321	\$14,396,321	\$14,346,321	<b>\$76,706,605</b>
Hauler and Manifest Program	\$1,231,511	\$1,106,511	\$1,106,511	\$1,106,511	\$1,106,511	<b>\$5,657,555</b>
Administration	\$1,878,163	\$1,878,163	\$1,878,163	\$1,878,163	\$1,878,163	<b>\$9,390,815</b>
Mandatory Contracts	\$1,349,530	\$1,349,530	\$1,349,530	\$1,349,530	\$1,349,530	<b>\$6,747,650</b>
<b>Totals</b>	<b>\$39,212,000</b>	<b>\$34,212,000</b>	<b>\$34,212,000</b>	<b>\$34,212,000</b>	<b>\$34,212,000</b>	<b>\$176,060,000</b>

\* The cleanup element includes the Farm and Ranch Solid Waste Cleanup and Abatement Grant Program. Its spending authority is separate from the Tire Fund's spending authority.

Note: The spending authority listed above for the Tire Program is from the Governor's May 2007 Revised Budget.

This fourth edition of the *Five-Year Plan* proposes an even more comprehensive and ambitious approach to managing California's waste tires, and is intended to comply with both the spirit and letter of the California Waste Tire Recycling Act and subsequent legislation (SB 876, Escutia, Chapter 838, Statutes of 2000) augmenting the original act. The activities identified in this *Five-Year Plan* are designed to help enhance and solidify the infrastructure that manages waste tires from generation to end-product by partnering with local jurisdictions, the private sector, and other State agencies. By building strong sustainable markets in California, the intrinsic value of waste tires as a raw material can be increased, diminishing the current economic advantages of landfilling.

In the meantime, California must remain vigilant in protecting the public and the environment from the hazards presented by discarded tires. The waste tire program's surveillance and enforcement efforts must remain strong and expand through local government involvement. Grants and technical assistance provided to local jurisdictions for surveillance, enforcement, and cleanup activities are crucial to guarantee adequate statewide coverage.

# Introduction

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This fourth revision of the *Five-Year Plan* has been developed based on the experience gained from previous programs and projects and input from public and private stakeholders, other states and countries, Board members, and staff. Since the Tire Program began, many reports and studies have been done. For instance, the report entitled California Waste Tire Program Evaluation and Recommendations: Final Report (pub. #540-99-006, also referred to below as the “AB 117 Report”) included recommendations to address such waste tire issues as elimination of waste tire stockpiles; protection of public health, safety, and the environment; and an increase in sustainable economic markets for waste tires in California. Many of the recommendations in the AB 117 Report provide the foundation for this plan.

Specific reports and studies concerning tire-related issues such as pyrolysis, devulcanization, consumer tire-buying habits, market status and trends, and many more help provide guidance to the CIWMB for setting priorities. Other reports from outside sources are also taken into consideration. For instance, in November 2003, the Senate Advisory Commission on Cost Control in State Government issued a report to the California State Senate entitled *CIWMB's Administration of the Waste Tire Recycling Management Program*. This report included findings and recommendations on how best to increase the effectiveness of the CIWMB's Tire Program. All the findings and recommendations in the report have been considered in the development of this biennial update.

Both the CIWMB and the California Environmental Protection Agency (Cal/EPA) adopted strategic plans that guide executive and management staff in establishing priorities and designing programs. These documents helped define the parameters of this *Five-Year Plan*. Within that framework, the CIWMB conducted numerous workshops, roundtable discussions, and conferences to solicit input and to share information. Furthermore, the Special Waste Committee held four public meetings in September 2006, October 2006, January 2007, and March 2007 to obtain input from stakeholders on this biennial update of the *Five-Year Plan* in its draft form. This biennial update of the *Five-Year Plan* is the culmination of past efforts, Board member guidance, and stakeholder input. The plan is divided into the program elements identified in Public Resources Code (PRC) section 42885.5(b). These elements are:

- Enforcement and Regulations Relating to the Storage of Waste and Used Tires.
- Cleanup, Abatement, or Other Remedial Actions Related to Tire Stockpiles Throughout the State.
- Research Directed at Promoting and Developing Alternatives to the Landfill Disposal of Tires.
- Market Development and New Technology Activities for Waste and Used Tires.
- The Waste and Used Tire Hauler Program and Manifest System.

Each of the program elements will consist of five sections:

1. *Program Background and Status*. This section will include background information, a summary of achievements, and an overview of planned activities.
2. *Direction Provided by SB 876*. This section lists the specific statutory language that directs the particular program element.
3. *Objectives*. This section lists the objectives the program element is designed to achieve.
4. *Performance Measures*. This section identifies how individual or groups of related element activities can be measured to show how well objectives and goals are met.
5. *Activity Description and Budget*. This section includes an overall chart of element activities and describes each activity with associated budget information by fiscal year.

# Enforcement and Regulations Relating to the Storage of Waste and Used Tires

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## ***Enforcement Program Background and Status***

The Tire Enforcement Program's primary goal is to reduce and, to the extent possible, eliminate the potential for waste tire fires and reduce the contribution of waste tire piles to the breeding of vectors throughout the state. To address this goal the CIWMB must identify illegal storage piles, assess waste tire businesses for the storage and permit standards, educate businesses and property owners on the regulations and assure that they meet these minimum standards. The CIWMB does this by: 1) having a strong enforcement program, including partnering with local enforcement agencies, the California Highway Patrol and the California District Attorney's Association; 2) maintaining inspector and local government enforcement training; and 3) developing and maintaining an enforcement database.

The program is aligned with CalEPA's enforcement initiatives, which include a progressive enforcement program. When a violation is first identified (the first offense) a standard notice of violation (NOV) is issued. If the violation is not corrected or is a repeat of past violations the following enforcement actions, are taken until the violation has been resolved: cleanup and abatement orders (for illegal tire piles only), administrative complaints, and referrals to local district attorneys' offices and the State Attorney General's office. Civil and criminal actions are reserved for egregious violations and/or repeat offenders. Since 1994, the CIWMB has issued over 450 cleanup and abatement orders, 225 administrative complaints, and 41 criminal complaints resulting in over \$7.5 million in fines and operators or property owners cleaning up approximately 6.1 million waste tires.

Since many of the initial legacy piles have been brought into compliance, the CIWMB has redirected resources to focus more on maintenance and prevention of illegal tire piles through permitting, inspection, and the waste tire hauler registration and manifest programs. Additionally, ongoing ground and aerial surveillance assist enforcement efforts by identifying remote illegal tire sites and illegal activities of tire businesses. These programs, especially inspection and surveillance programs generate enforcement cases on an ongoing basis. However, the overall number of illegal tire pile cases has been declining. Since 2002, staff investigated and took enforcement actions on 62 illegal tire sites.

Prior to 2002, most of the inspections, investigations, and enforcement efforts were conducted by five CIWMB field staff. Their efforts focused on enforcement of cases identified through complaints and referrals from other agencies. As a way to provide consistent, uniform, and proactive enforcement throughout California, the CIWMB has significantly increased the number of local agencies engaged in tire enforcement activities through the tire enforcement grant program. As a result, inspections increased 543% from fiscal year 2002/03 (1663 inspections) to fiscal year 2005/06 (10,702 inspections).

## ***Objectives***

The enforcement program has the following objectives:

1. Support existing and new waste tire enforcement grantees by providing stable funding and ongoing assistance.
2. Inspect tire businesses on a routine bases to assure compliance with all State laws and regulations.
3. Provide ongoing surveillance for illegal tire sites. Identify and investigate all suspected illegal sites through ground and aerial surveillance and respond to complaints.
4. Bring all known sites that are operating illegally (without the proper permits and/or operating outside the terms and conditions of their permits, or State minimum standards) into compliance through a progressive enforcement program.
5. Manage a tire database that will collect and store the necessary information for an effective program.

## Performance Measures

Every year, Tire Program staff report on the status of the performance measures listed in each element of the Five-Year Plan. The 3<sup>rd</sup> Edition of the Five-Year Plan contained five performance measures for the Enforcement Element, which are listed along with the attendant accomplishments for the previous two fiscal years in Appendix A (see page 41). As a consequence of this review process, staff may recommend that some measures be deleted or adjusted and others may be added. Further, during the development of each biennial revision of the Five-Year Plan, Board members and stakeholders, through an open forum process, help determine the objectives for each of the five elements of the Plan. For consistency, the performance measures listed below have been updated to align with the activities listed in this Biennial Revision of the Five-Year Plan.

The enforcement program will use the following measures to evaluate success in achieving its objectives:

1. **Increase and maintain the waste tire enforcement grantee coverage in the state to 80 percent or more by 2008.** *As of FY 2006/07 the enforcement grantees cover 79% of the State.*
2. **Establish baseline numbers to monitor the effectiveness of the waste tire enforcement program by the end of 2008 by: reporting on the cost of the program, statewide coverage, number of inspections, and Notice of Violations, and CIWMB referrals.** *As of April 19, 2007, \$27,095,295 has been awarded to waste tire enforcement program grantees; grantees cover 79% of the State; 7740 of inspections have been conducted (average increase of 81% per year since 2002); 1280 notices of violation have been issued, and 19 referrals have been made to the CIWMB.*
3. **Provide waste tire enforcement grantee training annually.** *As of April 18, 2007, 4 grantee roundtables were conducted covering the following areas: Inspection and Enforcement Procedures and Issues related to Grant Management and Administration.*
4. **Inspect all tire businesses at least once by December 2008. Thereafter, inspect permitted facilities at least once every year; haulers at least once every two years; and active generators at least once every three years. Where there have been compliance problems, inspect more frequently as resources allow.** *As of July 2004, approximately fifty percent of the state-wide tire businesses have been inspected. In conducting inspections of facilities with compliance issues, grantees will perform follow-up inspections and/or enforcement actions to ensure violations are corrected.*
5. **Actively search for new illegal tire piles. (Track and report on illegal waste tire piles identified through the CIWMB's surveillance activities).** *This is a new performance measure that staff has been working on since late 2005. As of 2007, staff has conducted intensive surveillance using satellite imagery and CHP helicopters and planes all along the Border Region and in six northern California counties (Sonoma, Marin, Placer, Solano, Sacramento, Stanislaus) searching for illegal tire piles. Ground verification of 54 tire piles is currently in progress.*
6. **Resolve all violations found through inspections. (Track and report the number of businesses found in violation and brought into compliance as the result of NOVs, cleanup and abatement orders, and administrative complaints.)** *Over the last three fiscal years (2003/2004, 2004/2005, and 2005/2006), 43 waste tires sites were found in violation and 32 sites have been cleaned up. The remaining sites are under enforcement orders.*
7. **Develop a Grantee Portal whereby grantees have access to the businesses, inspections and basic enforcement information in their jurisdiction by the end of 2007.** *This is a new performance measure. Tire staff has been working closely with the CIWMB Information Management Branch since 2005 to design a grantee web portal.*

## Activity Description and Budget

The enforcement program will implement a two-pronged approach to statewide enforcement. This approach will use local enforcement entities wherever possible and State resources in “gap” areas. However, the waste tire enforcement program will provide ongoing assistance to local jurisdictions and oversee the entire effort. Table 2 provides a list of activities and associated budgets for the Enforcement and Regulations Relating to the Storage of Waste and Used Tires Element.

**Table 2: Budget for Enforcement and Regulations Relating to the Storage of Waste and Used Tires**

Program Area	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12
Staffing and Administration	\$1,755,458	\$1,755,458	\$1,755,458	\$1,755,458	\$1,755,458
Waste Tire Enforcement Support Activities	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000
Enforcement Case Assistance	\$100,000	\$100,000	\$200,000	\$0	\$200,000
Local Government Waste Tire Enforcement Grants	\$6,750,000	\$6,750,000	\$6,750,000	\$7,000,000	\$7,500,000
Database Development and Maintenance	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
<b>Totals</b>	<b>\$9,305,458</b>	<b>\$9,305,458</b>	<b>\$9,405,458</b>	<b>\$9,455,458</b>	<b>\$10,155,458</b>

- 1. Staffing and Administration:** The enforcement program element consists of 16.75 staff positions and includes administrative and other costs associated with implementation of enforcement goals.

### Activity Funding

FYs 2007/2008–2011/12 .....\$1,755,458 per fiscal year\*

*\*Estimate of staffing and administrative costs*

- 2. Waste Tire Enforcement Support Activities:** This line item is a combination of several activities and agreements that will support the overall mission of enforcing the laws regarding the hauling and disposal of waste and used tires in the State of California and along the California Mexico Border Region. This combined activities approach will provide flexibility with respect to program funding for each activity. Of the \$600,000 allocated per fiscal year for these activities, \$200,000 each fiscal year will be used for activities along the Mexican border region in California. Funds will be allocated to the following projects:

**CHP Agreement to Support Enforcement Activities:** This effort continues to enhance the working relationship that has been established between the CIWMB and the California Highway Patrol (CHP). Under this agreement the CHP will continue to support CIWMB field efforts in the areas of ground and aerial surveillance, covert and overt investigative, inspector security, training for state and local law enforcement officers, and roadside checkpoints to assist CIWMB as well as local enforcement personnel.

**Satellite Surveillance Project:** This project uses the current available satellite imagery to review and analyze large sections of land. This feature has been proven to work and is expected to be an excellent tool for the continued support of field staff in their work to locate and monitor illegal waste tire piles in California. This activity is especially useful in finding tire piles located in remote and isolated areas of Central and Northern California with limited access and the large desert regions in Southern California.



**ARB Surveillance Assistance:** This activity will support both CIWMB and Local Enforcement Waste Tire Grantees field investigative efforts. The ARB has extensive experience in assisting other agencies in the purchase, maintenance, monitoring, and use of both covert and overt surveillance equipment. This expertise has aided and should continue to aid the CIWMB and Local Waste Tire Grantee's in their efforts to find and prosecute those individuals who haul or dispose of tires illegally.

**Analysis of Targeted Study Areas for Waste Tire Enforcement:** Provide site/topic specific studies that target issues relating to the enforcement of used and waste tire laws in California. This activity will provide the CIWMB with the flexibility to respond to situations that arise, which may not have been previously under consideration. For instance, Senate Bill 772 (Ducheny) required the CIWMB to track both legal and illegal waste and used tire flow through the California/Mexico border. The CIWMB was able to respond quickly by contracting for the California Mexico Waste Tire Border Study, which will meet the requirements of the statute and help the CIWMB understand the aspects and complexities of tire transport across the border

**Training Support for Waste Tire Enforcement Inspectors and Managers:** This activity will work with Office of Emergency Services and the California Specialized Training Institute to provide comprehensive and up-to-date training that focuses on tire enforcement and environmental compliance in support of CHP training. In addition, funds will be used to supplement the tire portion of the Local Enforcement Agencies' Conference.

#### Activity Funding

FYs 2007/08–2011/12.....\$600,000 per fiscal year

3. **Enforcement Case Assistance:** The CIWMB's Legal Office generally prosecutes administrative enforcement penalty actions to ensure uniformity of enforcement and to expedite processing. However, criminal and certain civil enforcement cases must be referred to local district attorneys' offices. Unfortunately, some rural jurisdictions do not have the resources to handle waste tire misdemeanor cases. In fiscal year 2001/02, the CIWMB established a two-year pilot program with the California District Attorney's Association (CDAA) to assist these jurisdictions. This pilot project proved successful. Therefore, the CIWMB will continue to work with authorized enforcement organizations as contractor(s) or grantee(s) for investigative and prosecutorial services to pursue criminal or civil enforcement actions.

#### Activity Funding

FYs 2007/08 and 2008/09.....\$100,000 per fiscal year

FYs 2009/10 and 2011/12.....\$200,000 per fiscal year

4. **Local Government Waste Tire Enforcement Grants:** PRC section 42889(b)(4) allows the CIWMB "to consider designating a city or county, or city and county as the enforcement authority of regulations relating to the storage of waste and used tires." This section also states that if the CIWMB designates a local entity for this purpose, it must provide sufficient, stable, and noncompetitive funding to that entity, based on available resources.

The purpose of this grant program is to enhance the statewide waste tire enforcement infrastructure in California. This grant program will augment the CIWMB's enforcement efforts in overseeing the proper management and flow of waste tires throughout the state. Eligible county and city jurisdictions can use these grant funds to identify waste tire sites, conduct waste tire facilities inspections, investigate illegal tire disposal activities, review waste tire hauler documents, issue NOVs, and ensure that tire dealers, auto dismantlers, tire haulers, and others comply with all applicable laws, storage standards, and manifest requirements. The priorities for this grant program are to:

- Offer a sufficient, stable, and non-competitive funding source.
- Ensure consistent statewide inspection and enforcement coverage.
- Assure cost-effective and successful local waste tire enforcement programs.



- Streamline the grant program application, annual renewal, and reporting process.
- Conduct evaluations to assess Grantee performance and enforcement program effectiveness.

Participation in this grant program has increased more than fourfold over the last three years. There were just 8 grant applicants in fiscal year 2001/02, 25 in fiscal year 2002/03, and 36 in fiscal year 2003/04, and most recently 39 grantees. As a direct result of the waste tire enforcement grants, local agencies have a much more vital and expanded role in enforcement.

CIWMB plans to revisit the needs of the local waste tire grantees and expand the program criteria. Expansion of the program may include increasing the hourly rate reimbursed to include all the costs of the Grantee, fewer restrictions on vehicle purchases, additional funds to tackle illegal dumping, and increasing the funding available for larger jurisdictions.

#### Activity Funding

FYs 2007/08–2009/10.....	\$6,750,000 per fiscal year
FY 2010/11.....	\$7,000,000
FY 2011/12.....	\$7,500,000

- 5. Database Development and Maintenance:** Over the last three to four years, the CIWMB has developed the Waste Tire Management System (WTMS) to track tire enforcement and manifest program activities. The system tracks waste tire generators, registered haulers, permitted and unpermitted end use facilities, manifest forms, inspection forms and enforcement actions. Although the systems foundation has been largely developed, there are several enhancements that are needed to have a fully functional and integrated system. Also, reporting capabilities and local and business access portals are not fully operational yet. Furthermore, WTMS's development was delayed because of radical changes to the manifesting collection and reporting system, which required redevelopment of the database. Therefore, additional development of the database is still needed. Upcoming modifications and advancements to the system will include:

- Creation of a portal whereby local grantees can access the database, which will assist them with their initial inspection and enforcement activities, merging local and state active business lists, and coordinating with the State on enforcement cases.
- Enhancement of enforcement tracking capabilities of penalties and other legal information.
- Development of standard reports to track inspection data, permit data, grantee referrals, and Notice of Violations to ensure performance measures are achieved.
- Development of standard management and grantee reports that will help assess program effectiveness.
- Incorporation of the surveillance information into the current WTMS complaint module.
- Design of a module to manage remediation and a link to databases containing local cleanup and amnesty day grant information.
- A link to databases containing information on tire-derived products, research, and promotion of tire recycling.
- Ongoing maintenance that includes revising inspection forms, entering in contracts to have inspections forms and other documents scanned and entered into WTMS on an on-going basis. Additionally, periodic upgrades to system are anticipated as the program continues to grow and change to meet the needs of our internal and external stakeholders as well as reporting requirements requested by CalEPA.

#### Activity Funding

FYs 2007/08–2011/12.....	\$100,000 per fiscal year
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# Cleanup, Abatement, or Other Remedial Actions Related to Tire Stockpiles Throughout the State

## Cleanup Program Background and Status

[PRC section 42846](#) allows the CIWMB to perform any cleanup, abatement, or remedial work required to prevent substantial pollution, nuisance, or injury to the public's health and safety at waste tire sites where the responsible parties have failed to take appropriate action. These efforts may entail stabilizing piles until they can be removed, removing all waste tires, and/or remediating the site after the tires have been removed. In general, these waste tire sites are referred to the Waste Tire Stabilization and Abatement Program once the Waste Tire Enforcement Program has exhausted enforcement efforts.

From the time the cleanup program began in 1994, the CIWMB has used contractors to remediate or stabilize illegal waste tire sites. Since 1995, the CIWMB has removed more than 771,128 tons of illegal waste tires and contaminated debris from 60 sites for a total cost of almost \$40 million. However, due to several major tire fires and the complicated enforcement issues surrounding the remaining waste tire sites on the short-term remediation list, there has been a decrease in the number of sites remediated. Beginning in 2001, remediation efforts were focused on cleaning up the Westley tire fire site. Then in 2003, the CIWMB directed staff to extinguish any smoldering tires at the Tracy tire fire site prior to the long-term remediation efforts that began in the spring of 2003. The majority of the long-term remediation funds allocated from 2004 through 2006 have been spent on work at the Tracy tire fire site. Both long-term remediation projects (the Westley and Tracy tire fire sites) have been completed.

In addition, the CIWMB has been pursuing enforcement actions and site access on recalcitrant owners of waste tire sites. Due to the success of these enforcement efforts, several sites on the list have been remediated by their owners. Continuing efforts are expected to result in the completion of five short-term remediation projects by the end of 2007. Another factor contributing to the decrease in remediation actions taken in recent years is that the CIWMB spent significant resources pursuing the complicated enforcement and resultant legal actions surrounding the Sonoma waste tire sites, which had the largest accumulation of waste tires awaiting remediation. The CIWMB's efforts have resulted in five of the eight Sonoma County sites being remediated since 2005. While the number of sites remediated each year has generally decreased since 1999, the cost of cleanup has varied significantly depending on the number of large projects undertaken in any given year. The following table lists annual remediation activities.

**Table 3: CIWMB Annual Remediation**

Year	Number of Sites	Tons of Tires Remediated	Remediation Cost
1995	6	21,544	\$870,832
1996	6	4,114	\$389,487
1997	9	283,292	\$1,367,760
1998	8	448,833	\$2,726,196
1999	15	13,345	\$2,848,992
2000	5	46,029*	\$3,705,430
2001	1	36,209*	\$2,162,000
2002	2	214,417*	\$11,624,345
2003	2	27,707*	\$2,002,383
2004	2	148,833*	\$9,859,548
2005	2	59,942*	\$1,984,784
2006	2	1,320	\$388,000
<b>Totals</b>	<b>60</b>	<b>1,305,585</b>	<b>\$39,929,757</b>

\*These totals include tons of contaminated debris removed from the long-term remediation projects.

Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

The purpose of the Local Government Waste Tire Cleanup Grant Program is to facilitate the removal, transport, and reuse/recycling/disposal of waste tires from illegal tire piles and areas where illegal dumping has occurred along public rights-of-way. This is done by providing grants to local governments and Native American reservations and rancherías.

**Table 4: Local Government Waste Tire Cleanup Grants**

Fiscal Year	Number of Sites	Amount Awarded
1997/98	8	\$171,286
1998/99	4	\$51,768
1999/00	6	\$213,126
2000/01	0	*
2001/02	8	\$449,889
2002/03	11	\$646,260
2003/04	14	\$712,286
2004/05	16	\$735,511
2005/06	20	\$778,044
2006/07	20	\$845,867
<b>Totals</b>	<b>107</b>	<b>\$4,604,037</b>

\* No funds available—sunset of tire fee.

Since 1992, the CIWMB has provided more than \$5 million to the Local Government Amnesty Event Grant Program. Two hundred eleven grants have been awarded to eligible local governments to recover waste tires from the general public. With these grants, local governments develop public education materials on proper maintenance and disposal of automobile tires and hold amnesty events where the public can drop off waste tires for free. The following table is a summary of the amnesty event grants.

**Table 5: Local Government Amnesty Event Grants**

Fiscal Year	Number of Grants	Amount Awarded
1992/93	4	\$59,100
1993/94	8	\$177,720
1994/95	13	\$387,989
1995/96	1	\$12,744
1998/99	16	\$176,543
1999/00	26	\$374,043
2000/01	0	*
2001/02	22	\$330,817
2002/03	11	\$321,247
2003/04	29	\$924,674**
2004/05	17	\$704,793
2005/06	31	\$808,879
2006/07	33	\$807,416
<b>Totals</b>	<b>211</b>	<b>\$5,085,965</b>

\* No funds available—sunset of tire fee.

\*\* The number of applicants increased because no matching funds were required.

## **Direction Provided by SB 876**

PRC section 42889(b):

*“These moneys shall be expended for. . . the following purposes:*

*. . . ¶ . . .*

*(5) To pay the costs of cleanup, abatement, removal, or other remedial action related to tire stockpiles throughout the state, including all approved costs incurred by other public agencies involved in these activities by contract with the board. Not less than six million five hundred thousand dollars (\$6,500,000) shall be expended by the board during each of the following fiscal years for this purpose: 2001-02 to 2006-07, inclusive.*

*. . . ¶ . . .*

*(9) To pay the costs to create and maintain an emergency reserve, which shall not exceed one million dollars (\$1,000,000).*

*. . . ¶*

*(10) To pay the costs of cleanup, abatement, or other remedial action related to the disposal of waste tires in implementing and operating the Farm and Ranch Solid Waste Cleanup and Abatement Grant Program established pursuant to Chapter 2.5 (commencing with Section 48100) of Part 7.”*

## **Objectives**

The cleanup program has the following objectives:

1. Eliminate illegal waste tire stockpiles.
2. Increase local government participation in eliminating illegal waste tire stockpiles within their jurisdictions.
3. Direct tires from cleanup to productive end use rather than landfill disposal to the greatest extent possible within reasonable cost parameters.

## **Performance Measures**

Every year, Tire Program staff report on the status of the performance measures listed in each element of the Five-Year Plan. The 3<sup>rd</sup> Edition of the Five-Year Plan contained five performance measures for the Cleanup Element, which are listed along with the attendant accomplishments for the previous two fiscal years in Appendix A (see page 41). As a consequence of this review process, staff may recommend that some measures be deleted or adjusted and others may be added. Further, during the development of each biennial revision of the Five-Year Plan, Board members and stakeholders, through an open forum process, help determine the objectives for each of the five elements of the Plan. For consistency, the performance measures listed below have been updated to align with the activities listed in this Biennial Revision of the Five-Year Plan.

The cleanup program will use the following measures to evaluate success in achieving its objectives:

1. **Complete the short-term waste tire remediation projects referred by the enforcement program and report status of projects to the CIWMB on an annual basis.** As of January 2007, sixty sites have been remediated including: *Amos Dixon, Nash Hill I and II, AJ Ranch, Raymond Road, Bebee Family Ranch, Silacci, Briggs, Wilson Bebee, Walnut Flats, Universal Portfolio, and the Garcia waste tire sites. Four of the sites referred to the program are still in the process of being remediated.*

2. **Increase the number of sites remediated through the Waste Tire Local Government Cleanup Grant Program by 5% annually through 2012.** *This is a new performance measure, and is expected to better reflect CIWMB success in this program than the previous waste tire local government cleanup grant performance measure.*
3. **Increase the number of waste tire amnesty grants issued to local governments by 5% annually through 2012.** *In FY 2005/06, the Board Awarded 31 amnesty event grants. In FY 2006/07, the Board awarded 34 amnesty day grants, which is a 9% increase from the previous year.*
4. **Increase the number of sites remediated through Farm and Ranch Cleanup Grants issued to local governments by 10% annually through 2012.** *This is a new performance measure, and is expected to better reflect the success in this program than the previous farm and ranch cleanup grants performance measure.*
5. **Assess existing tire fire response protocol and update and amend the Uniform Fire Code every five years in cooperation with the Office of the State Fire Marshall.** *During FY 2004/05 the Department of Forestry & Fire Protection, Office of the State Fire Marshall (OSFM), under contract with the CIWMB, updated the tire fire response protocol. Additionally the OSFM conducted 8 trainings to 225 local governments around the state.*

*Note:* The performance measure for Long-Term Remediation was deleted since all of the long-term remediation projects (Westley and Tracy) have been completed.

### **Activity Description and Budget**

The cleanup program will continue to remediate sites with CIWMB-managed contractors and grants to local governments for amnesty events and cleanup of illegal piles. In addition, the CIWMB will provide funding to the farm and ranch solid waste cleanup grant program to further mitigate future accumulations of waste tires. Also, the CIWMB will establish an emergency reserve account, which cannot exceed \$1 million, as directed by SB 876. Table 6 provides a list of activities and associated budgets for the element entitled "Cleanup, Abatement, or Other Remedial Actions Related to Tire Stockpiles throughout the State."

**Table 6: Budget for Cleanup, Abatement, and Remedial Action**

<b>Program Area</b>	<b>FY 2007/08</b>	<b>FY 2008/09</b>	<b>FY 2009/10</b>	<b>FY 2010/11</b>	<b>FY 2011/12</b>
Staffing and Administration	\$632,178	\$632,178	\$632,178	\$632,178	\$632,178
Short-Term Remediation Projects	\$1,000,000	\$500,000	\$1,000,000	\$500,000	\$500,000
Local Government Waste Tire Cleanup Grant Program	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Local Government Amnesty Grants	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Emergency Reserve Account	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
Farm and Ranch Solid Waste Cleanup and Abatement Grant Program*	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000
Waste Tire Fire Suppression	\$0	\$100,000	\$0	\$0	\$0
<b>Totals</b>	<b>\$5,032,178</b>	<b>\$4,632,178</b>	<b>\$5,032,178</b>	<b>\$4,532,178</b>	<b>\$4,532,178</b>

\* Funds transferred to Farm and Ranch Solid Waste Cleanup and Abatement Grant Program.

- 1. Staffing and Administration:** The costs for cleanup as estimated in this plan are generally higher than past cleanups. Sites yet to be remediated tend to be more remote and/or more complex than those sites that have previously been remediated. Currently, the cleanup program consists of 3.75 positions.

#### **Activity Funding**

FYs 2007/08–2011/12 .....\$632,178 per fiscal year\*

*\*Estimate of staffing and administrative costs*

- 2. Short-Term Remediation Projects:** The CIWMB funds short-term remediation of illegal waste tire sites with CIWMB-managed contracts. These contracts are awarded for a two or three-year period. Funds allocated to remediation efforts may roll over from one fiscal year to the next. The CIWMB will prioritize all identified sites to ensure that the most significant sites are addressed first. Projects will be broken out according to their long or short-term nature.

The CIWMB will continue to move aggressively to remediate the sites on the current short-term projects list. Currently, there are about 12 sites that have been identified for short-term remediation. Of these sites, three have been approved for CIWMB-managed remediation and are in the process of being cleaned up. The remaining nine sites have permitting, CEQA, site access, or enforcement issues that need to be resolved prior to approval as a CIWMB-managed cleanup project.

#### **Activity Funding**

FYs 2007/08, 2009/10 .....\$1,000,000 per fiscal year

FYs 2008/09, 2010/11 and 2011/12 .....\$500,000 per fiscal year

- 3. Local Government Waste Tire Cleanup Grant Program:** Under this grant program, local governments including local enforcement agencies, county and city departments, fire districts, code enforcement agencies, irrigation districts, and California Indian Tribes are eligible for funding. Grants are awarded to pay for the cost of cleanup, abatement, or other remedial actions related to the disposal of waste tires. Over the last several years, revisions to program criteria have increased participation in the local government waste tire cleanup grant program significantly.

The funding for this program has increased an average of 20 percent per fiscal year over the last three years. Finally, the Board approved a cost recovery policy that allows the CIWMB to recover its costs for illegal waste tire remediation where appropriate. Of the \$1,000,000 allocated per fiscal year for this program, \$100,000 each fiscal year will be ear marked for cleanup projects along the Mexican Border Region in California.

#### **Activity Funding**

FYs 2007/08–2011/12 .....\$1,000,000 per fiscal year

- 4. Local Government Amnesty Grants:** This grant program is designed to help divert waste tires from landfill disposal and prevent illegal tire dumping. California cities, counties, special districts, other political subdivisions and jurisdictions joined together by formal agreements, as well as California Indian Tribes, are eligible to apply for these competitive grants. A waste tire amnesty event allows private citizens to take waste tires, in non-commercial quantities, to a specific location established by the local government administering the grant program.

#### **Activity Funding**

FYs 2007/08–2011/12 .....\$1,000,000 per fiscal year



5. **Emergency Reserve Account:** SB 876 legislation requires that the CIWMB create and maintain an emergency reserve account, which shall not exceed \$1 million. These funds will be used to respond to emergencies involving waste tires, such as tire fires.

**Activity Funding**

FYs 2007/08–2011/12 .....\$1,000,000 per fiscal year\*

*\* This emergency reserve account is subject to change depending on the need or emergencies that arise. Legislation requires the CIWMB to maintain \$1,000,000 in this account. However, more than \$1,000,000 may be expended on a yearly basis. If allocated funds are not expended, funds may be carried forward to the fund balance in the following fiscal year. A million dollar reserve must be maintained within expenditure authority for emergency purposes.*

6. **Farm and Ranch Solid Waste Cleanup and Abatement Grant Program:** The purpose of the Farm and Ranch Solid Waste Cleanup and Abatement Grant Program is to remediate solid waste that has been disposed of illegally on farm or ranch properties. SB 876 requires that funds be allocated to pay the costs of cleanup, abatement, or other remedial action related to the illegal disposal of whole waste tires on farm or ranch properties. This program cleans up sites that in the past have acted like a magnet for white goods, used oil, other trash, and waste tires. Cleaning these sites up will help deter future illegal dumping of old tires; therefore, funding is proposed to continue at \$400,000 for this program.

**Activity Funding**

FYs 2007/08–2011/12 .....\$400,000 per fiscal year

7. **Waste Tire Fire Suppression:** The CIWMB will continue to work with the Office of State Fire Marshall to update the tire fire curriculum, work with appropriate State and local fire agencies to develop a tire fire protocol and to update and amend the Uniform Fire Code. The CIWMB will also take the lead in making certain that the most current information is available on tire fires suppression protocol in order to minimize: adverse impacts to emergency response staff, threats to public health and safety, as well as adverse environmental impacts.

**Activity Funding**

FY 2008/09 .....\$100,000

# Research Directed at Promoting and Developing Alternatives to the Landfill Disposal of Tires

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## ***Research Program Background and Status***

The CIWMB has investigated a variety of waste tire diversion alternatives through internally generated research contracts and literature searches of research throughout the world. These research efforts have assisted the CIWMB in focusing on a rich mixture of strategies that will ultimately divert the majority of waste tires from landfills. To date, projects involving RAC, civil engineering (CE) uses, energy recovery, molded rubber products, and other tire-derived product applications have been explored. So far, RAC and CE uses have shown the greatest promise for diverting the most tires from landfills. However, RAC and CE applications cannot, in and of themselves, divert the remaining 10.2 million tires still currently being landfilled. Therefore, the CIWMB will continue to refine its knowledge of existing uses and products, but will also investigate and research new and innovative applications. Furthermore, the CIWMB will partner with educational institutes to assure that knowledge gained through its research is passed on to engineers and become part of the curriculum for their licenses, as well as through continuing education credits.

The CIWMB has expended significant resources promoting the use of Tire-Derived Aggregate (TDA) in various CE applications. Through two environmental services contracts with Dana Humphrey Consulting Engineering, the CIWMB has provided education on, and promoted the use of, TDA as an alternative to conventional lightweight fill materials in highway construction projects. Up until now, these efforts were focused primarily on Caltrans, because it is the agency responsible for developing technical standards for highway construction. Staff has coordinated meetings with Caltrans' design engineers, given short courses on the use of TDA in highway construction, and provided both technical and environmental information to regulatory agencies responsible for the oversight of these projects. While Caltrans is an important player in this effort, more emphasis will be placed on local governments in the future.

Through the CIWMB's previous efforts, Caltrans identified several potential highway projects in which shredded tires could be used as lightweight fill. One of these projects was the Dixon Landing/I-880 interchange project (Santa Clara County) in which tire shreds were used as lightweight fill. This project was completed in August 2001. Two other projects consisted of the construction of retaining walls that used TDA as a lightweight backfill material. The first project was built in 2003 on Route 91 in Riverside County and used 84,000 tires as TDA. The second wall was completed in 2006 on Highway 215 in Riverside County and used 150,000 tires. Currently, the CIWMB, in coordination with Caltrans, is developing conceptual designs and conducting field tests to validate a new retaining wall design, which will take advantage of the reduced backfill pressure by using less concrete and steel in its designs. Once completed, this new design will be used in future retaining wall projects resulting in significant cost savings to the State.

In another CE application, the CIWMB partnered with the Valley Transportation Authority (VTA) in San Jose to investigate the use of TDA as a vibration-damping material in VTA's light-rail system. The results of this investigation were very favorable, so VTA used 100,000 tires as TDA in 2,000 feet of light-rail section along its Vasona Line expansion that was completed in 2004. This resulted in significant cost savings because conventional technology for vibration mitigation costs \$500 per foot, whereas TDA costs only \$150 per foot.

Another area in which the CIWMB will be doing further investigations is CE applications for use at landfills. Preliminary investigations have shown that TDA could be used successfully in landfill applications in place of materials commonly used in drainage layers (i.e., landfill gas and leachate collection systems). However, TDA was not an economically viable alternative at that time, because the price of aggregate was relatively low.

Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

Since then, it has become increasingly more difficult to site new gravel quarry operations in California; therefore, the price for aggregate has increased to the point where TDA has now become a viable alternative for landfills in certain parts of the State. Consequently, staff will be investigating the use of TDA in landfills by providing grants for projects that will demonstrate the performance of TDA in various landfill applications.

Staff will continue to conduct research into the environmental impacts from TDA uses to assist in the development of technical standards for CE applications. This research will require actual monitoring of pilot and field studies to demonstrate and promote CE applications of waste tires.

The CIWMB partnered with Caltrans again to identify potential RAC formulations to test for recyclability using laboratory and field simulations. Once this first phase is completed, the second phase would be to test the recycled RAC formulations in an actual highway construction project. This could be accomplished through a project with a local government or Caltrans.

In 2003, the CIWMB published its report, *Assessment of Markets for Fiber and Steel Produced from Recycling Waste Tires*. This report concluded that while recovered steel has market potential, fiber has few market outlets at this point in time. The report also recommended that the CIWMB should help to improve processor-user communication, which would help develop markets for high-quality tire-derived steel. The CIWMB will address this market application through the existing Tire-Derived Product Business Assistance Program.

Another study, *Evaluation of Waste Tire Devulcanization Technologies*, was completed in 2004. In terms of the potential for producing high-quality devulcanized rubbers, the best technology appeared to be ultrasonic devulcanization. However, this report concluded that under current and likely near-term future conditions, all forms of devulcanization face an uphill struggle to be competitive with virgin rubber. A third study, *Technology Evaluation and Economic Analysis of Waste Tire Pyrolysis, Gasification, and Liquefaction*, was completed in March 2006. This study found that while these technologies have merit, at this point in time, they are not economically feasible at commercial scales.

## **Direction Provided by SB 876**

SB 876 includes legislative intent language as follows (from 2000 uncoded law, SB 876):

*“(g) The purpose of this act is to do all of the following: . . . (2) Encourage tire manufacturers to promote the use of retreaded and longer-lasting tires, as well as develop recycled-content rubber tires.”*

PRC section 42889(b):

*“The remaining moneys collected pursuant to Section 52885 shall be used to fund the waste tire program, and shall be appropriated to the board in the annual Budget Act . . . [and] shall be expended...for the following purposes:*

*... ¶ ...*

*6) To make studies and conduct research directed at promoting and developing alternatives to the landfill disposal of waste tires.”*

## **Objectives**

The research program has the following objectives:

1. Work with other State agencies, academia, and research and testing laboratories to ensure that engineering curricula contain a wide range of tire-derived product applications.
2. Conduct research and establish programs that support and promote new technology, new uses for waste tires, and improvements to products that use California-generated waste tires.
3. Identify research gaps in existing data and determine what areas need further investigation.

## **Performance Measures**

Every year, Tire Program staff report on the status of the performance measures listed in each element of the Five-Year Plan. The 3<sup>rd</sup> Edition of the Five-Year Plan contained five performance measures for the Research Element, which are listed along with the attendant accomplishments for the previous two fiscal years in Appendix A (see page 41). As a consequence of this review process, staff may recommend that some measures be deleted or adjusted and others may be added. Further, during the development of each biennial revision of the Five-Year Plan, Board members and stakeholders, through an open forum process, help determine the objectives for each of the five elements of the Plan. For consistency, the performance measures listed below have been updated to align with the activities listed in this Biennial Revision of the Five-Year Plan.

The research program will use the following measures to evaluate success in achieving its objectives:

1. **Develop curriculum and continuing education credits at the university level for engineers and public works officials regarding the use of RAC and CE uses for waste tires by May 2009.** *This contract was approved at the April Board 2007 meeting and will be completed by May 2009.*
2. **Investigate and evaluate the benefits of and obstacles to existing and emerging highway construction and civil engineering applications that use tire-derived materials. Make recommendations to the Board by December 2008 about strategies to overcome obstacles and to develop and promote these applications in grant and outreach programs.** *There has been much progress made in identifying the obstacles and educating both local and state governments evidenced by the fact that the Board has conducted several successful CE applications and awarded grants for numerous RAC projects.*
3. **Develop in-house capabilities to track the market for various tire-derived products on an on-going basis.** *This is a new performance measure.*

## Activity Description and Budget

The research program will concentrate on activities that support increased use of RAC, CE applications, and other tire-derived products. Table 7 provides the budget for the element entitled "Research Directed at Promoting and Developing Alternatives to the Landfill Disposal of Tires."

**Table 7: Budget for Research Directed at Promoting and Developing Alternatives to the Landfill Disposal of Tires**

Program Area	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12
Research Staff and Administration	\$343,839	\$343,839	\$343,839	\$343,839	\$343,839
CE Applications for Waste Tires	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Research on Highway Construction Applications using Waste Tires	\$650,000	\$0	\$0	\$650,000	\$0
Recycling RAC	\$250,000	\$0	\$0	\$0	\$0
Tire-Derived Product and Materials Market Analysis	\$200,000	\$100,000	\$0	\$0	\$0
Study to Examine Options for Addressing Flow of Used and Waste Tires from California and Mexico	\$100,000	\$0	\$0	\$0	\$0
<b>Totals</b>	<b>\$2,043,839</b>	<b>\$943,839</b>	<b>\$843,839</b>	<b>\$1,493,839</b>	<b>\$843,839</b>

- 1. Research Staff and Administration:** Currently, 2.75 positions support the CIWMB's research efforts.

### Activity Funding

FYs 2007/08–2011/12 .....\$343,839 per fiscal year\*

\*Estimate of staffing and administrative costs.

- 2. CE Applications for Waste Tires:** Although the CIWMB has made significant progress promoting CE applications, there is still much work that needs to be done to establish this use of waste tires as an accepted CE material. This activity will continue CIWMB's program of investigating new CE uses for waste tires and education of State, local, and private-sector engineers on the use of TDA in CE projects. For research projects focusing on specific CE uses of waste tires, project-specific contracts may be implemented. These projects could include, but are not limited to, erosion control, earthquake damping, vibration mitigation, and sound walls.

### Activity Funding

FYs 2007/08–2011/12 .....\$500,000 per fiscal year

3. **Highway Construction Applications using Waste Tires:** The CIWMB has made significant progress promoting RAC and, as a result, the use of RAC continues to increase statewide. However, there are several applications that the CIWMB does not have sufficient information regarding benefits and drawbacks to endorse at this time. Nevertheless, these applications do have the potential to use waste tires. Some of these applications include: terminal blend asphalt rubber, rubber chip seals, and rubberized slurry seals. Under this program element, the CIWMB will study these applications in order to determine their benefits. If the research supports the benefits of these applications, then the CIWMB can include these applications in future outreach efforts to create sustainable markets for additional waste tires. Additionally, the CIWMB will study pavement preservation strategies that will increase the lifespan of highways.

**Activity Funding**

FYs 2007/08 and 2010/11 .....\$650,000 per fiscal year

4. **Recycling RAC:** It has been demonstrated that conventional asphalt pavements can be recycled; therefore the ability to recycle RAC continues to be an issue in promoting the use of RAC with local governments. Several literature studies have been conducted, the most recent done by Caltrans in 2005. However, there is a need to do a field study to validate the findings of the literature studies. Under this program element, the CIWMB will work in conjunction with the Southern California RAC Technical Center to partner with a local government to do a field investigation of an actual project using recycled RAC.

**Activity Funding**

FY 2007/08.....\$250,000

5. **Tire-Derived Product and Materials Market Analysis:** This market analysis will provide the CIWMB with a two year assessment of tire-derived market trends, performance indicators, raw material supply flow, and future market conditions. This analysis will specifically address material and product flow through the marketplace and establish a mechanism to periodically update market data so that the most current information is available to decision makers. When complete, this study will be used to validate the data used in the California Waste Tire Generation, Markets, and Disposal Staff Report. This analysis will be conducted in conjunction with the Tire-Derived Product Business Assistance Program.

**Activity Funding**

FY 2007/08.....\$200,000

FY 2008/09.....\$100,000

6. **Study to Examine Options for Addressing Flow of Used and Waste Tires from California and Mexico:** Mexico imports used tires from California that have a very short lifespan. Many of these imported tires are illegally disposed of and may cause environmental hazards. Illegally disposed of tires on the Mexican side of the border have caused environmental issues in California, e.g., tires entering the Tijuana Estuary and smoke from tire fires in Mexicali dispersing into Calexico. This study will examine a range of options to address these issues, assess impacts, and provide recommendations.

**Activity Funding**

FY 2007/08.....\$100,000



# Market Development and New Technology Activities for Waste and Used Tires

## ***Market Development Program Background and Status***

The purpose of the Tire-Derived Product Market Development Program (Market Program) is to promote the development of long-term, sustainable markets for tire-derived products in California. In addition, the CIWMB will investigate the potential for export markets for both raw tire-derived materials and products. Furthermore, once research is done on new products and usages and barriers are identified and eliminated, the CIWMB will develop programs to promote these products as well.

In the early years of the Tire Program, the CIWMB placed more emphasis on research and innovative product development. While research and pilot projects are still necessary to demonstrate the viability and marketability of various tire-derived product applications, at some point products must be accepted into the marketplace based on real-world cost-effective applications. Therefore, the primary objective for this revision of the *Five-Year Plan* will be to develop solid markets for RAC, CE applications, and other established TDPs. A broad range of TDPs will be required to make the markets in California competitive and sustainable. Product stewardship, social marketing, curriculum development, and grant programs for other TDPs and businesses will be used to meet that objective. The ultimate goal of this Market Program will be to assure that the intrinsic value of waste tires as a commodity offsets the low cost of disposal for waste tires.

Currently, the Market Program is focusing its efforts on two fronts: 1) stimulating demand; and 2) improving the ability of tire-derived product businesses to respond to an expanding marketplace. The CIWMB is addressing the first front through outreach and grant programs for RAC, Tire-Derived Aggregate (TDA) and TDPs. The Tire-Derived Product Business Assistance Program (BAP) is specifically designed to address the second front by helping businesses to streamline operations, reduce production costs, improve marketing efforts, and diversify product lines. The BAP helps businesses improve their ability to operate on a sustainable basis and manufacture products without the need for ongoing assistance. While these programs are designed to deal with the short to medium-term financial and technical business needs necessary to establish sustainable markets, this targeted assistance will eventually be phased out. However, as new products and fledging industries emerge, the Tire Program will develop programs accordingly.

Through other successful CIWMB research efforts, TDA was identified as a cost-effective and reliable alternative to lightweight fill materials. As such, the CIWMB will be increasing its promotion of TDA for CE applications. Since 1997, the CIWMB has expended significant resources promoting the use TDA in various CE applications. Table 8 shows that nearly 1 million tires were used in highway engineering, levee reinforcement, and leach field projects. These projects indicate that great market potential exists for using large quantities of waste tires when replicated in other projects throughout California.

**Table 8: Waste Tire Civil Engineering Projects**

Year	Item	Cost	Number of Tires Used
1997	Levee reinforcement project	\$660,000	45,000
1998	Research of tire shreds in septic leach fields	\$169,400	20,000
2001	Lightweight fill for the Dixon Landing Interchange	\$350,000	600,000
2001	Sound and Vibration Attenuation for Light Rail System	\$0*	100,000
2003	Lightweight fill for the Route 91 Retaining Wall	\$100,000	84,000
2006	Lightweight fill for the Highway 215 Retaining Wall	\$190,000	150,000
<b>Totals</b>		<b>\$1,469,400</b>	<b>999,000</b>

*\*After an initial consultation with CIWMB staff and consultants, Valley Transportation Authority paid the cost for the material and construction for this project.*

The levee reinforcement project in an irrigation canal adjacent to the Feather River used about 45,000 waste tires. The tires came from a CIWMB remediation project in Oroville. The levee will continue to be monitored under carefully controlled water flow and pressure conditions. Another pilot project was a septic tank leach field using TDA instead of traditional rock aggregate as the drainage and filter medium. This project was conducted through an interagency agreement with Caltrans to demonstrate the beneficial reuse of tires chips in septic tank leach field construction. The field demonstration portion of this project is complete and the CIWMB is analyzing the data to determine the viability of this application.

Additionally, the CIWMB and Caltrans worked together on the Dixon Landing Project, which demonstrated (in an actual highway application) that TDA properties allowed it to replace conventional lightweight fill material while reducing costs. The CIWMB also partnered with the Valley Transportation Authority (VTA) in San Jose to investigate the use of TDA as a vibration-damping material in VTA's light-rail system. Several East Coast states have successfully used tire shreds as lightweight fill in many highway projects.

At its own expense, VTA used 100,000 tires as TDA in 2,000 feet of light-rail section along its Vasona Line expansion in 2003 and 2004. The initial results were favorable and staff is assisting VTA with monitoring the performance.

In addition, the Route 91 project in Southern California used 84,000 tires as lightweight fill material in a retaining wall. The CIWMB and Caltrans are developing conceptual designs and conducting field tests to validate a new retaining wall design, which will take advantage of reduced backfill pressure by using less concrete and steel in its designs. The second phase of this retaining wall study will be constructed in 2005. This test section will use TDA made from 250,000 waste tires.

The success of these projects has prompted Caltrans to issue a letter to its district directors stating that the use of tire shreds has proven to be an economically feasible alternative where conditions warrant the use of lightweight fill. In fact, this letter specifically said, "Districts shall consider tire shreds as a first option when lightweight fills are recommended for projects. After economic and technical analysis, if tire shreds are not selected then those reasons shall be documented and sent to James Davis, Deputy Division Chief, Geotechnical Services." As a result, the CIWMB anticipates many more projects coming forward, both at the State and local levels, which have the potential to divert millions of waste tires from disposal.

Through the CIWMB's first time user RAC grant program, scores of new paving projects have been completed or are being planned in California. When compared to conventional asphalt, RAC saves money, provides greater skid resistance, is quieter, and lasts longer. The CIWMB is successfully promoting the benefits of RAC through conferences, the RAC technical centers, and other outreach efforts. Another way the CIWMB will promote markets is by working with California's college and university system to develop curriculum for both RAC and CE applications. Furthermore, the CIWMB will provide funds for projects and equipment through grants, contracts, and interagency agreements, which will lead to greater RAC usage.

Caltrans reports annually to the CIWMB about projects that use waste tires. These reports, covering 1999–2006, show that Caltrans used over 9.8 million waste tires in RAC and other highway projects throughout the state. Additionally, Assembly Bill (AB) 338 (Levine, Chapter 709, Statutes of 2005) was enacted to require the Caltrans to use, in its highway construction and repair projects, asphalt containing crumb rubber. Furthermore, it requires the Secretary of Business, Transportation and Housing, on or before January 1, 2009, and on or before January 1 annually thereafter, to prepare a specified analysis comparing the cost differential between asphalt containing crumb rubber and conventional asphalt, including specified information.

The CIWMB outreach and grant programs have increased the use of RAC by local governments considerably. Dozens of local governments are using RAC for projects. The City of Thousand Oaks has paved hundreds of miles of lanes with RAC using more than one million tires. The counties of Sacramento, San Diego and Los Angeles are following suit. One of the primary focuses of the CIWMB's

new campaign to promote environmentally preferable products for the State is promoting RAC where it has not been used. As the number of “first-time” users diminishes, the emphasis will shift to encouraging local jurisdictions to expand their existing use of RAC products. The CIWMB is also investigating several other transportation-based products, such as terminal blend asphalt rubber, rubber chip seals, and rubberized slurry seals.

While other TDPs do not consume large numbers of waste tires, it is important to have a rich variety of outlets for crumb rubber to assure a long-term sustainable market. Furthermore, many of these TDPs have benefits over conventional alternatives. For instance, rubberized sidewalks help keep tree roots from destroying the sidewalks, and these more resilient sidewalks are easier on joggers’ and walkers’ joints. Weed abatement mats can save State agencies and local governments money by reducing the need for herbicides and maintenance staff. Other transportation-related TDPs can effectively replace existing products like top-hats and road cones. To help stimulate these markets, the CIWMB will provide funding through TDP grants, the Sustainable Building Program, and other business assistance programs. These and other programs will consider the number of waste tires used per project, costs per tire, and feasibility to determine funding opportunities.

## ***Direction Provided by SB 876***

PRC section 42889(b):

*“The remaining moneys collected pursuant to Section 42885 shall be used to fund the waste tire program, and shall be appropriated to the board in the annual Budget Act . . . [and] shall be expended...for the following purposes:*

8. . . ¶

*(7) To assist in developing markets and new technologies for used tires and waste tires. The board’s expenditure of funds for purposes of this subdivision shall reflect the priorities for waste management practices specified in subdivision (a) of PRC Section 40051.”*

## ***Objectives***

The market development program has the following objectives:

1. Increase the use of RAC and TDA applications by providing funds and technical assistance to State agencies and local governments.
2. Increase the purchase of TDPs (not RAC or TDA) by providing services and funding to State and local agencies to offset costs and promote sustainable purchase practices.
3. Increase statewide public awareness on purchasing longer-lived tires, proper care and maintenance, and supporting local use of RAC and CE applications using social marketing techniques designed to include cultural and ethnic considerations.
4. Increase the production capability and cost-effectiveness of processing waste tires into value-added products by offering help with business and marketing plans and equipment upgrades.

## ***Performance Measures***

Every year, Tire Program staff report on the status of the performance measures listed in each element of the Five-Year Plan. The 3<sup>rd</sup> Edition of the Five-Year Plan contained five performance measures for the Market Element, which are listed along with the attendant accomplishments for the previous two fiscal years in Appendix A (see page 41). As a consequence of this review process, staff may recommend that some measures be deleted or adjusted and others may be added. Further, during the development of each biennial revision of the Five-Year Plan, Board members and stakeholders, through an open forum

Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

process, help determine the objectives for each of the five elements of the Plan. For consistency, the performance measures listed below have been updated to align with the activities listed in this Biennial Revision of the Five-Year Plan.

The market development program will use the following measures to evaluate success in achieving its objectives:

1. **Increase the percentage of waste tires diverted from landfill disposal from 73.5 percent to 85 percent by 2010.** *The diversion rate for 2005 was estimated to be approximately 75%.*
2. **Establish a baseline for current usage of RAC by State agencies and local governments by June 2008, and increase the use of RAC by an additional 15 percent by 2010.** *Staff is currently working on establishing a baseline for use of RAC by local governments.*
3. **Establish a baseline for current usage of CE applications by State agencies and local governments by June 2009, and increase the use of CE applications by 10 percent by 2011.** *Staff is currently working on establishing a baseline for use of CE applications by state agencies and local governments*
4. **Establish a baseline for current purchase of tire-derived products (not RAC or TDA) by State agencies and local governments by December 2007, and increase purchases by 15 percent by 2010.** *The CIWMB in cooperation with Department of General Services has developed and implemented an electronic reporting system that tracks State agencies' and the Legislature's purchases of products made from recycled content. Staff will use data from this database to develop a baseline for current purchases of tire-derived products.*
5. **Provide business assistance services to 40 businesses and document successes and obstacles by 2010.** *This is a new performance measure. As of FY 2006/07, the CIWMB is providing businesses assistance services to 34 businesses from the first two cycles of the Business Assistance Program.*
6. **Reduce the number of waste tires generated in California from 1.1 to .9 per person per year by 2010.** *As of 2005, the rate of tire generation per person per year was 1.1. The CIWMB conducted a study to establish a more accurate way to measure generation rates and a model to track changes over time. This information will be used to determine what actions the CIWMB can to have the most impact on reducing the generation rate of tires in California.*

## Activity Description and Budget

The Market Development Program is focusing on RAC, TDA, and TDPs that use the largest number of tires. Since the largest number of tires can be diverted through RAC and TDA applications, significantly more resources are being devoted to them. To further this effort, the CIWMB will work with the University of California and community colleges to develop course curricula to ensure future generations of engineers will consider using RAC and TDA. To assure that tire-derived product businesses can meet the demand, the BAP will work closely with the industry to affect a positive sustainable infrastructure. Table 9 provides the budget for the element entitled "Market Development and New Technology Activities for Waste and Used Tires."

**Table 9: Budget for Market Development and New Technology Activities for Waste and Used Tires**

Program Area	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12
Waste Tire Market Development Staff and Administration	\$1,011,072	\$1,011,072	\$1,011,072	\$1,011,072	\$1,011,072
Outreach Campaigns	\$2,300,000	\$1,800,000	\$1,800,000	\$1,800,000	\$1,800,000
Civil Engineering Grants and Contracts	\$2,500,000	\$3,250,000	\$3,750,000	\$3,750,000	\$3,750,000
Targeted RAC Incentive Program	\$3,500,000	\$2,250,000	\$1,750,000	\$1,500,000	\$1,500,000
RAC Reward Grant Program	\$3,020,583	\$2,520,583	\$2,015,583	\$2,170,583	\$2,045,583
RAC Technology Centers	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Tire-Derived Product Grants	\$2,400,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
Tire Business Assistance and Equipment Program	\$3,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
Border Program Activities	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Sharing of Environmental Education Materials throughout the Border Region	\$20,000	\$20,000	\$50,000	\$20,000	\$20,000
Cal/Max and WRAP	\$24,666	\$24,666	\$24,666	\$24,666	\$24,666
Tire Events	\$75,000	\$0	\$75,000	\$0	\$75,000
State Agency Partnership to Promote the Use of Tire-Derived Products	\$400,000	\$0	\$0	\$0	\$0
<b>Totals</b>	<b>\$18,371,321</b>	<b>\$14,996,321</b>	<b>\$14,596,321</b>	<b>\$14,396,321</b>	<b>\$14,346,321</b>

1. **Waste Tire Market Development Staff and Administration:** Currently, 9.75 staff positions support the CIWMB's tire marketing efforts.

#### Activity Funding

FYs 2007/08–2011/12 .....\$1,011,072 per fiscal year\*

*\*Estimate of staffing and administrative costs*

2. **Outreach Campaigns:** This activity contains three campaigns that will be combined to target several different audiences.

**Community Education Campaign:** This campaign will target the general public with messages designed to properly educate drivers about proper tire maintenance, to encourage customers to leave their old tires at the dealer when buying new tires, and educate consumers on purchasing longer-lived tires. Following on the heels of the current successful pilot campaign in the Bay and Fresno markets, this effort will utilize a variety of studies available through previous research and campaign efforts as well as stakeholder input. This campaign will be implemented in conjunction with the CIWMB's Public Affairs Office and other entities like the Flex Your Power at the Pump Campaign, the Rubber Manufacturer Associations, and the California Tire Dealers Association to assure the most cost-effective approach.

**California Quiet Roads Outreach:** A lesson was learned in researching a grass roots effort conducted in Arizona on promoting rubberized asphalt concrete to the general public. These efforts created a "buzz" among Arizona residents after hearing the benefits of RAC such as noise reduction and road longevity. This campaign will focus on general public relations strategies and tactics to raise awareness on RAC and its benefits statewide. This campaign will be designed to energize consumers and residents on RAC in an effort to generate a demand to public officials on implementing RAC at the local level.

**Targeted Local Jurisdiction Outreach for RAC and CE:** This effort will continue the successful campaign launched in 2005 that targeted specific local jurisdictions on the benefits of RAC and CE. Efforts will be concentrated on delivering the recycled content materials messaging to targeted jurisdictions while preparing product and Local Assistance and Market Development staff to continue to provide ongoing outreach efforts.

#### Activity Funding

FY 2007/08..... \$2,300,000

FYs 2008/09-2011/12..... \$1,800,000 per fiscal year

3. **Civil Engineering Grants and Contracts:** The CIWMB will partner with State and local agencies to pay for engineering services, tire-derived materials, and other costs associated with civil engineering and roadway construction projects. This effort can include projects that use TDA in applications such as lightweight fill, gas collection at landfills, drainage layers, erosion control, or vibration damping layers in light rail projects. In addition, roadway projects may include rubber slurry seals, rubber chip seals, rubber cape seals, terminal blend asphalt concrete, and other emerging paving applications that use tire-derived materials. These projects will be conducted through CIWMB managed contracts or partnerships with local governments through grants and interagency agreements.

#### Activity Funding

FY 2007/08.....\$2,500,000

FY 2008/09..... \$3,250,000

FYs 2009/10-2011/12..... \$3,750,000 per fiscal year



4. **Targeted RAC Incentive Program:** The CIWMB will continue the first-time RAC users program and continue to award incentive grants to influence local government agencies to use RAC. In addition, the CIWMB will contract for a RAC technical expert to provide support to local governments and Caltrans and complete the work on the RAC database that will track information on all RAC projects.

The CIWMB will expand the RAC program to provide local government assistance and do outreach to encourage partnerships that will result in cooperative purchasing of RAC, which will stimulate a sustainable market for RAC in areas of the state where none existed before. This program will be conducted in conjunction with the CIWMB's Public Affairs Office Boardwide outreach efforts.

#### Activity Funding

FY 2007/08.....	\$3,500,000
FY 2008/09.....	\$2,250,000
FY 2009/10.....	\$1,750,000
FYs 2010/11-2011/12.....	\$1,500,000 per fiscal year

5. **RAC Reward Grant Program:** This program will be similar in scope to grants provided through legislation (SB 1346, Kuehl, Chapter 671, Statutes of 2002) for using RAC in local government paving projects; however, the CIWMB will have the ability to set criteria for this program to address changing market issues. The focus of this program will be to encourage local jurisdictions that already use RAC to expand their use to more projects. It will also help to meet the requirements of SB 369 (Simitian, Chapter 300, Statutes of 2006).

#### Activity Funding

FY 2007/08.....	\$3,020,583
FY 2008/09.....	\$2,520,583
FY 2009/10.....	\$2,015,583
FY 2010/11.....	\$2,170,583
FY 2011/12.....	\$2,045,583

6. **Rubberized Asphalt Concrete Technology Centers (RACTC):** The RACTCs are located in Los Angeles and Sacramento and provide statewide technical assistance to local governments through direct consultation, presentation of local and regional workshops, providing of informational materials, and a website.

#### Activity Funding

FYs 2007/08–2011/12 .....	\$100,000 per fiscal year
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7. **Tire-Derived Products Grants:** Eligible grant recipients may include, but are not limited to the following; businesses or other enterprises, and public entities as determined by the Board. This program provides grants for the purchase of tire-derived products, such as sports surfacing, rubberized sidewalks, weed abatement covers, mulch, sound barriers, and traffic safety products. All eligible applicants would be funded unless the grant program was over-subscribed. At that point, a random selection process would be used to determine who would receive funding. Project and applicant eligibility requirements are approved each year by the Board. Currently, projects are required to divert a minimum number of California-only waste tires, awarded based on a capped dollar amount per tire diverted, and limited to a maximum award amount. In addition, new applicants receive funding priority. This provides projects that divert the most tires per dollar spent to receive the most benefit from the program, more jurisdictions can participate, and new jurisdictions are exposed to the benefits of these products. Projects must meet all applicable local, State and federal laws, regulations and requirements, including but not limited to Health and Safety Code § 115725, et seq.

#### Activity Funding

FY 2007/08.....\$2,400,000  
 FYs 2008/09–2011/12 .....\$2,000,000 per fiscal year

- 8. Tire-Derived Product Business Assistance and Equipment Program:** This program is designed to both increase demand for TDPs and assure the availability of tire-derived raw materials for those products. Additionally, the program will provide assistance to businesses that help extend the life of tires through a variety of methods. This would be done by building the capacity and improving the operational and cost efficiencies of TDP businesses by providing technical and consultative assistance as well as equipment. Eligible businesses may apply for assistance to: (1) evaluate and improve their business plan and operations, (2) enhance marketing efforts, (3) test and certify new products, and (4) purchase necessary equipment.

Staff and an independent consultant will perform an analysis of the business and identify areas of need and associated costs. Modifications to the existing program may include providing increased equipment funding for businesses that also receive technical assistance. Examples of assistance include, but are not limited to:

- General Business Assistance (business plan development or modification, human resource issues, inventory management/control [including just-in-time inventory systems], asset management, appropriate business structure, appropriate or optimal financial structure, accounting systems and controls, website development or modification, etc.).
- Technical Assistance (efficient plant design, manufacturing process improvement or optimization, optimizing specific equipment performance, increasing the amount/percentage of recycled material, converting to recycled material from virgin material, etc.).
- Marketing Assistance (marketing plan development or modification, product pricing, product promotion, product packaging, distribution systems, cooperative marketing, ad placement, trade shows, etc.).
- Product Testing and Certification (testing products to satisfy the marketplace requirements of the public and private sectors).
- Purchasing equipment through CIWMB grants or loans that can be used to process tires, make tire derived products, or extend the life of existing tires (i.e., through the use of nitrogen).

This program will be run in cooperation with the Recycling Market Development Zone program.

#### Activity Funding

FY 2007/08.....\$3,000,000  
 FYs 2008/09–2011/12 .....\$2,000,000 per fiscal year

- 9. Border Program Activities:** Used and waste tires continue to flow into Mexico through border entries, and it is presumed that some of these same tires end up being illegally disposed along the border of California and Mexico. The waste tires that end up along the border regions of Mexico and California are either being dumped illegally at various sites or used inappropriately for structural purposes in or near the City of Tijuana, Mexico.

The U.S. EPA funded cleanup of waste tires sites near or along the California-Mexican Border last year. The CIWMB will continue to collaborate with U.S. EPA and the Border Task Force to help develop community outreach, additional training and technical support to Mexican Tire Haulers, and training for CHP Commercial Officers who work along the California-Mexico borders.

CIWMB will continue its participation with the Border 2012 Task Force, Resource Conservation Challenge Border Group, California Biodiversity Council, Biodiversity Along the Border Committee, and the 2008 Border Governors Conference to resolve the problems caused by illegally dumped waste tires along the border region. Also, the CIWMB has contracted with the City of San Diego Solid Waste Local Enforcement Agency to identify stakeholders, infrastructure, and problems associated with the waste tires washing back into the San Diego region from the Tijuana River. CIWMB and City of San Diego staff will participate in meetings with local and state government, and environmental officials from Mexico and California as well as with other stakeholders in tire industry of Mexico to address these issues. Other tasks of this contract will include assessment of Mexico's existing regulatory requirements regarding waste tires, and development of an Environmental Outreach Program to inform the border communities in Mexico of the health and safety issues associated with waste tires.

***Provide Technical Assistance for State of Baja California's Development of Integrated Waste Management Plans:*** In 2003, Mexico passed the Integrated Waste Management Law (IWM Law) to promote proper waste management practices for diverse waste streams and encourage reduction, reuse, and recycling of waste. In December 2006, Mexico passed regulations for the IWM Law, which included the management of waste tires. One of the activities required under the IWM Law was for states and municipalities to assess waste streams and develop a Waste Management Plan (WMP). The states, in this case, the State of Baja CA, will need to work with each of the municipalities to prepare waste management plans and provide technical assistance. The purpose of this effort is to provide the State of Baja CA with technical assistance regarding waste tire management practices at the municipal level, which ultimately would benefit the border region and assist in minimizing environmental impacts to California. Technical assistance would include providing information regarding enforcement techniques, remediation programs, alternative uses for tires, marketing assistance, and tracking the flow of tires in Mexico.

Providing technical assistance to Mexico regarding its waste tire management plan, which identifies institutional needs, will help Baja California create an infrastructure that will benefit both California and Mexico. This effort will leverage the knowledge and experience of local, state and federal agencies from both sides of the border to develop a model plan for managing waste tires in Mexico. This project will work towards reducing illegal dumping of waste tires, and promote waste reduction, reuse, and recycling.

Specific tasks include:

- Participating in scoping meetings with the State of Baja CA, and the municipalities of Tijuana, Mexicali, Rosarito and Ensenada, the Mexican Environmental Ministry, and other interested stakeholders to define potential waste tire management priorities;
- Working with industry partners to identify problem areas and needs for the proper management of wastes tires in compliance with the IWM Law and other local/ state requirements; and
- Provide technical assistance for Mexican State's Development of model waste tire management plan.

#### **Activity Funding**

FYs 2007/08-2011/12.....\$20,000 per fiscal year

### **10. Sharing of Environmental Education Materials Throughout the Border Region:**

SB 772 requires CIWMB to work with Mexico in areas relating to waste and used tires, and environmental education and training. In coordination with the Office of the Secretary for Environmental Protection-Border Affairs and the CIWMB's Office of Education and the Environment, the Tire Program will develop a mechanism with Mexico's Secretariat for Public Education (SEP), Baja California's Secretaría de Protección Ambiental, and the Baja California's

Education System (SEBS-ISEP) allowing for bi-national distribution of the Cal/EPA-CIWMB's environmental education curriculum entitled "Conservation and Pollution Prevention at a Shared Border". This elementary school curriculum includes lessons that are relevant to prevalent border conditions (e.g., land, water, and air pollution) and is consistent with existing environmental education and training principles in Mexico. Both English and Spanish versions of the curriculum will be provided to border teachers, educators, and schools. This curriculum contains scientific and resource-based lessons regarding the border area, with key steps toward environmental sustainability. The goal is to reach out to a minimum of 12,000 teachers and educators during 2008, which will impact school districts on both sides of the border.

The reproduction of the curriculum was funded from unused FY 2006/07 tire funding. Distribution of the curriculum will occur through a Cal/EPA-CIWMB/Mexico mechanism/work plan, with participation by the general public, local government on both sides of the border, during fiscal years 2007/08 and 2008/09.

#### **Activity Funding**

FYs 2007/08-2008/09 and 2010/11-2011/12.....\$20,000 per fiscal year  
FY 2009/10.....\$50,000

### **11. Cal/Max and WRAP Activities:**

**Cal/MAX:** Cal/MAX is a free service designed to help businesses find markets for non-hazardous materials they may have been traditionally discarded. Cal/MAX helps businesses, industries, and institutions save resources and money. In a new section that includes tire haulers, Cal/MAX will include listers with wanted or available tire byproducts, crumb rubber, or waste/used tires. Cal/MAX will feature waste tire-related articles in its Creative Reuse or Cal/MAX Connections articles twice a year. Catalog distribution averages about 7,500 per quarter. The articles also appear on the Cal/MAX website, which receives about 33,000 hits per month.

**Waste Reduction Awards Program:** The State of California's Waste Reduction Awards Program provides an opportunity for California businesses to gain public recognition for their outstanding efforts to reduce waste through efficient use of resources and other waste prevention practices. All businesses and private nonprofit organizations with California facilities are encouraged to apply. Efforts would also include an increase in outreach efforts to automotive and tire-related businesses through WRAP.

#### **Activity Funding**

FYs 2007/08–2011/12 .....\$24,666 per fiscal year

### **12. Tire Events:** CIWMB will hold tire workshops, forums, and/or training. These tire business/product events will provide attendees with up-to-date information on CIWMB's waste tire management programs. They provide a venue to discuss all aspects of waste tire management, including hauling, manifests, cleanup, proper disposal, recycling technologies, and research and market development activities. These events offer a venue for Board Members, staff, and stakeholders to meet and focus on issues of common concern. Wherever possible, events will be conducted in conjunction with other related events organized by organizations like the League of California Cities, California Public Works Association, California State Association of Counties, etc. The events will also be coordinated with the CIWMB's Public Affairs Office.

#### **Activity Funding**

FYs 2007/08, 2009/10, and 2011/12 .....\$75,000 per fiscal year

### **13. State Agency Partnership to Promote the Use of Tire-Derived Products**

CIWMB will partner with other State agencies to identify cost-effective TDPs that can replace existing products purchased. As part of this effort, these State agencies will be required to provide follow-up reports that detail how successfully any replacement products perform, and also whether the product would be purchased in the future. Additionally, any TDPs purchased or manufactured would have to be made with 100 percent California waste tire rubber.

#### **Activity Funding**

FY 2007/08.....\$400,000

# Waste and Used Tire Hauler Program and Manifest System

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## Hauler and Manifest Program Background and Status

The original waste tire manifest system was created in 1995 to provide documentation of waste tire transactions between the tire generator, tire hauler, and the end-use facility. A copy of the manifest form was left with each of the respective parties as proof of the tire transaction. The form was retained at the place of business for three years so it could be reviewed by CIWMB staff or authorized representatives if requested. Unfortunately, since the information was not provided directly to the CIWMB, there was no simple way to track tire movement.

To better track the flow of waste tires in California, the Legislature passed SB 876 in 2000, which required the CIWMB to develop and implement a uniform statewide waste and used tire manifest program. This legislation stated that every person who transported 10 or more waste or used tires would have to hold a valid tire hauler registration and use State-issued decals and manifests. Prior to obtaining registration, a prospective hauler would also be required to post a \$10,000 bond. Furthermore, tire haulers would have to register with the CIWMB annually, possess manifests during the transport of waste or used tires, transport only to legally authorized end-use facilities, and submit the completed manifest form to the CIWMB. The law also requires that a person who received tires from an unregistered hauler had to report that hauler to the CIWMB by providing the name, address, phone number, and license plate number of the unlicensed hauler, and the amount of tires.

The Hauler and Manifest Program consists of two separate components: 1) registration and 2) manifesting. Enforcement efforts against haulers have resulted in significant fines summarized in the Enforcement Program element. Currently, the CIWMB registers more than 1,050 California waste and used tire haulers and more than 7,000 vehicles. Registrations expire annually at the end of each calendar year. The CIWMB sends renewal packages to registered haulers well before the end of the year to ensure haulers can renew their registrations in a timely manner. Licenses of haulers who do not renew by the end of the calendar year are cancelled.

Current law allows exemptions from waste tire hauler registration requirements under certain conditions, which include:

- Persons hauling nine or fewer tires.
- Persons hauling using a government vehicle or persons employed by either local, State, or federal government and who are not hauling tires for hire.
- Persons hauling tires through the State without loading or unloading tires.
- Persons hauling tires for agricultural purposes, as defined in statute.
- Common carriers hauling tires on a back-haul.
- Haulers inadvertently carrying tires commingled with solid waste, which are not economically feasible or safe to remove.
- Persons who receive a letter from the local enforcement agency (LEA) for a one-time haul to the landfills or permitted destination site.

The California Uniform Waste and Used Tire Manifest System went into full scale operation in July 2003. Although this system provided useful information on waste tire flow (including import and export data), and has proven useful as an enforcement tool to investigate potential violators, the full promise of a system to track waste tires from “cradle to grave” was not fully realized. The problems encountered with this new Manifest system was, the voluminous amount of paperwork that was required, which prompted numerous complaints from the regulated community and strained the CIWMB’s ability to compile and integrate the information.



Therefore in 2004 and 2005, the CIWMB conducted workshops to gather input from stakeholders on how best to improve the system. Working closely with stakeholders, the CIWMB streamlined and simplified the original process for complying with the manifest program requirements. For instance, participants are now able to transmit tire manifests and tire trip log information electronically to the CIWMB through the CIWMB's electronic data transfer (EDT) process using both batch mode and web-based data entry capabilities. The current manifest and trip log forms were re-evaluated to identify opportunities for improvement. As a result, the CIWMB developed a revised Comprehensive Trip Log (CTL) form, which was adopted in February of 2005. The revised CTL form contains the same information as the previous manifest and trip log forms; however, it condenses this information onto a single form for reporting purposes. During the first year of implementation, the total volume of paperwork was reduced by 67% by using this new CTL form. Additionally, the further expansion of EDT will allow additional savings as 46% of all records are now being submitted by EDT.

### ***Direction Provided by SB 876***

SB 876 legislation mandated changes to the hauler and manifest program. In particular, it provides for a reform to the manifest system and the development of a new manifest form. SB 876 mandated the following:

1. "Close the loop" on accountability by requiring that copies of each manifest are returned to CIWMB for monitoring.
2. Increase from four to nine the maximum number of waste and used tires that can be transported without having to obtain a waste tire hauler permit.
3. Provide for "one-time hauls" to support amnesty days and individual cleanup of small tire piles.
4. Enhance the manifest system and make the manifest available in electronic format, which would make it possible to submit information to the CIWMB electronically.
5. Change the placement of the decal from the driver's side door to the lower right-hand corner of the windshield.
6. Increases the penalties levied for violations of the PRC pertaining to waste and used tire hauling from \$5,000 to \$25,000.

Currently PRC section 42961.5, the CTL manifest form is referred to as the "California Uniform Waste and Used Tire Manifest" and must be originated by the hauler and it was their responsibility to provide a copy to the generator when the tires were picked up or to the end use facility after the tires reached the end-use destination.

With the new mandates put in place by SB 876 (PRC section 42950 et seq.), the California Uniform Waste and Used Tire Manifest is used by all parties. One of the first tasks accomplished as a result of the new mandates was to identify waste and used tire generators, haulers, and end-use facilities, despite the fact that the number is always in a state of flux, since waste tire locations are constantly opening and closing during the year.

### ***Objectives***

The Hauler and Manifest Program has the following objectives:

1. To complement and support the CIWMB's waste tire enforcement program by providing comprehensive and auditable data on waste tire transactions between generators, haulers, and end-use facilities, thereby reinforcing compliance with waste tire statute and regulation and reducing the incidence of illegal waste tire disposal.
2. To provide information on tire movements within the state and across borders to support tire diversion and market development activities.

## **Performance Measures**

Every year, Tire Program staff report on the status of the performance measures listed in each element of the Five-Year Plan. The 3<sup>rd</sup> Edition of the Five-Year Plan contained five performance measures for the Hauler and Manifest Element, which are listed along with the attendant accomplishments for the previous two fiscal years in Appendix A (see page 41). As a consequence of this review process, staff may recommend that some measures be deleted or adjusted and others may be added. Further, during the development of each biennial revision of the Five-Year Plan, Board members and stakeholders, through an open forum process, help determine the objectives for each of the five elements of the Plan. For consistency, the performance measures listed below have been updated to align with the activities listed in this Biennial Revision of the Five-Year Plan.

The Hauler and Manifest Program will use the following measures to evaluate success in achieving its objectives:

1. **Reduce the percentage of waste and used tire generators, haulers, and end-use facilities that are not submitting manifest forms by 15% by December 2009.** *As of March 2007, 42 percent (6,779 out of 16,030) were not submitting manifest forms.*
2. **Reduce the percentage of manifest form errors that are submitted by waste tire haulers by 45 percent by December 2010.** *Ninety-two (92) percent of the manifest forms submitted from June 2003 to January 2007 by waste and used tire haulers had errors.*
3. **Track the percentage of waste tire enforcement program cases where the manifest system information has been used to assist CIWMB staff and local enforcement agencies and report annually.** *For 2006, 98 percent (44 out of 45) of the enforcement cases used manifest information.*
4. **Track the number of penalties levied for violations of the PRC pertaining to waste and used tire hauling and report annually. This is an ongoing performance measure to track the enforcement actions and penalties sought by the CIWMB against waste tire haulers.** *For 2004-2006, the CIWMB took enforcement actions against 25 waste tire haulers. The CIWMB assessed penalties of \$126,950 and an additional \$95,800 was held in abeyance.*
5. **Determine the quantity of waste or used tires being picked up or delivered for each county by December 2007.** *A total of 308,616,872 waste or used tires were picked up and 548,569,297 waste or used tires were delivered within the state during the time period of January 1, 2004 to December 31, 2006. A table showing individual county tire flow information is available in Appendix A.*

## Activity Description and Budget

The Hauler and Manifest Program will focus on implementing the new changes to the program and identify obstacles and opportunities for further improvements. Additionally, the CIWMB will provide ongoing training and assistance to all the stakeholders. Table 10 provides a list of activities and associated budgets for the Waste and Used Tire Hauler and Manifest System Element.

**Table 10: Budget for the Waste and Used Tire Hauler Program and Manifest System**

Program Area	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12
Hauler/Manifest Staff and Administration	\$656,511	\$656,511	\$656,511	\$656,511	\$656,511
Pilot Project Using Hand Held Devices for Tracking	\$125,000	\$0	\$0	\$0	\$0
Hauler Program and Manifest System	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000
<b>Totals</b>	<b>\$1,231,511</b>	<b>\$1,106,511</b>	<b>\$1,106,511</b>	<b>\$1,106,511</b>	<b>\$1,106,511</b>

- Hauler/Manifest Staff and Administration:** The Hauler and Manifest Program is currently staffed with 5 full-time permanent IWMS positions and one-half (0.5) Office Technician. One other is in the Administration and Finance Division to support the data management needs of the program.

### Activity Funding

FYs 2007/2008–2011/12 .....\$656,511 per fiscal year\*

\* Estimate of staffing and administrative costs

- Pilot Project Using Hand Held Devices for Tracking:** The program will examine the feasibility of using portable hand held devices for electronic tracking of waste tires, in lieu of the paper manifest forms. Program staff will conduct a pilot program with one to three tire haulers to determine the effectiveness of such scanning devices and the overall cost savings, if any, to implement such a program.

### Activity Funding

FY 2007/2008.....\$125,000

- Hauler Program and Manifest System:** These expenses are for training, printing of the manifest and training documents, contracts and travel expenses. With the CIWMB approval of the CTL form, the overall cost factor for the manifest program has been reduced. The numbers presented in Table 10 for “Hauler Program and Manifesting” adequately reflects this revision. In addition, of the \$450,000 allocated per fiscal year \$10,000 will be used to provide training and technical support to the Mexican Tire Haulers.

### Activity Funding

FYs 2007/2008–2011/12.....\$450,000 per fiscal year

## CIWMB Administration

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“CIWMB Administration” refers to the accounting of central management costs, such those pertaining to Executive Management, Accounting, Human Resources, Grants, Business Services, small-office support, and statewide Pro Rata<sup>†</sup> assessments that generally serve all of CIWMB (i.e., indirect or overhead costs). This Administration funding represents the distribution of “indirect costs” to direct program activities of the CIWMB that include the Tire program.

### Activity Funding

FYs 2007/08–2011/12.....\$1,878,163 per fiscal year

## Mandatory Contracts

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“Mandatory Contracts” includes allocation for the following: Attorney General’s Office, Board of Equalization, Department of Finance, Foundation of California Community Colleges, Governor’s Office of Planning and Research, Office of Administrative Hearings, Peters Shorthand Reporting, Professional Recovery Systems, and the University of California, Davis.

### Activity Funding

FYs 2007/08–2011/12.....\$1,349,530 per fiscal year

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<sup>†</sup> Pro Rata is the sharing of general funded central service costs by funds other than the General Fund, as mentioned in the State Administrative Manual, Section 8753.

## Appendix A: Accomplishments Based on Performance Measures from the July 2005 Five-Year Plan

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This section contains performance measures from the current *Five-Year Plan for the Waste Tire Recycling Management Program (3<sup>rd</sup> Edition Covering Fiscal Years 2005/06-2009/10)*, dated July 2005, with accomplishments reported after each performance measure. Data collected is for fiscal year 2005/06 unless specified.

### **Enforcement Performance Measures**

To evaluate the Program's success in achieving its objectives, the following measures were proposed in the July 2005 *Five-Year Plan*.

1. Assess waste tire enforcement grantee performance by conducting annual reviews on cost effectiveness, program efficiency, number of inspections, enforcement activities, equipment costs, and how the grantee meets the terms and conditions of the grant Agreement, and then prepare a baseline report by 2008.

Program Evaluation - Cost Effectiveness, Program Efficiency, Number of Inspections, Enforcement Activities, Equipment Costs:

Chart 1 provides a cost summary of the Local Government Waste Tire Enforcement Program since its inception along with more recent performance data. Each year grantees have increased work performed. Prior to 2001, grantee duties were limited to surveying tire dealers and dismantlers to find out if they were storing more 500 or more tires on site, and conducting inspections of permitted Waste Tire Facilities (WTF) to determine regulatory compliance. The primary goal of the "survey program" at the time was to develop an extensive list of WTFs that fell under the CIWMB's jurisdiction (facilities accepting or storing 500 or more tires at a given location). The survey included mailing out forms to businesses to determine if they accepted or stored over 500 tires and/or going to sites and asking questions about the business to see if they fell under the purview of the CIWMB, i.e., were they a WTF, were they using registered waste or used tire haulers, were they manifesting tires properly, etc.

With the passage of Senate Bill 876 in 2000, the Local Government Waste Tire Enforcement Grant Program radically changed to include a more comprehensive enforcement program at both the State and local level. Funding was increased to \$4,000,000 in fiscal year 2002/03 and to \$6,000,000 per year thereafter. Additionally, grant program authority was augmented to include surveillance and education elements and grantee responsibilities expanded to include routine inspections of all end-users, generators and haulers. Finally, the Enforcement Grant Program became a noncompetitive grant program that covered the cost of inspection, surveillance, enforcement coordination, public education, equipment, employee training, and report writing in order to secure more participation in the program.

**Chart 1: Cost of the Local Government Waste Tire Enforcement Grant Program**

Grant Term/ Fiscal Year	FY Work was conducted	No. of Grantees	Total Amount Awarded	Actual Cost	Average Cost per Jurisdiction	No. of inspections conducted	No. of NOV
FY 1996/97	97/98	4	\$110,000	\$105,000	\$26,000	*	NA
FY 1997/98	98/99	9	\$315,000	\$315,000	\$35,000	*	NA
FY 1998/99	99/2000	9	\$360,000	\$350,000	\$40,000	*	NA
FY 1999/2000	2000/01	8	\$500,000	\$390,000	\$48,000	*	NA
FY 2001/02 (6)	02/03	8	\$760,000	\$560,000	\$70,000	1475	212
FY 2002/03 (8)	03/04	24	\$3,720,000	\$2,020,000	\$84,000	6611	459
FY 2003/04 (9)	04/05	36	\$4,710,000	\$3,250,000	\$90,000	7740	609
FY 2004/05 (11)	05/06	38	\$5,250,000	\$3,500,000***	\$92,000***	9282	802
FY 2005/06 (12)	06/07	39	\$5,667,495	**	**	**	**

Note: Dollar amounts are to the nearest \$10,000.

\* No information for specific years is available during the grant terms from FY 1996/97 to 2001/02; however, grantees inspected approximately 2000 waste tire sites during this overall timeframe.

\*\* Information is not available yet due to grant cycle timing.

\*\*\* This is an estimate based on 90% of the data that is available and projection.

#### *Conclusions:*

Chart 1 shows the average cost per jurisdiction increased each year. This is due primarily, if not entirely, to the expanded duties and extra work being done at the local level. The result of this stepped-up effort was an increase in number of Notice of Violations (NOV) over the last four years. The inspection work alone has increased six times; equal to the cost of the overall program increasing six times. However, grantees are providing more services such as surveillance work, public out reach and education, and conducting first line enforcement.

The above data indicates an increasing number of sites are being inspected by grantees and more compliance issues are being resolved at the NOV enforcement stage, which is more time and cost effective than higher levels of CIWMB enforcement such as Cleanup and Abatement Orders (CAO), Administrative Complaints, or Hearings. A successful enforcement program is one where compliance is maintained and/or achieved quickly by industry. Grantees have the ability, both because of their staffing levels and their close proximity, to follow up on compliance issues in a prompt manner.

*Note:* In November 2004, the Board made changes to the program in order to improve efficiencies. They included setting a cap for hourly costs, a cap on hours spent per inspection, a limit on equipment costs relative to the overall grant request, and a vehicle security arrangement.

#### *Performance Evaluation:*

Starting in FY 2004/05 Grant Cycle, grantee performance was evaluated based on the following Board-approved criteria:



Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

- Completion of the majority of tasks identified in the work plan/budget;
- Submission of complete and accurate inspection forms;
- Effective and efficient use of approved grant funds;
- Timely follow-up of complaints and referrals;
- Timely submission of enforcement referrals to the CIWMB and District Attorney, if applicable; and
- Participation in joint training with CIWMB field staff.

Staff determined that three of the thirty-eight Grantees (City of Oakland, County of El Dorado, City and County of San Francisco) did not perform inspections activities or complete the majority of tasks identified in the work plan for TEA 11 (FY 2004/05). These grantees did not apply for a Grant in FY 2005/06 (TEA 12).

**2. Track the number of inspections conducted for specific types of tire facilities within the set timeframes—for permitted facilities, once every year or every 30 months; for haulers and exempt and excluded facilities, once every two years; and for generators, once before 2008.**

Specific data by type of businesses was not available at the time of this report due to database limitations. However, Chart 2 below shows that significant effort was made to accomplish this goal. Specifically, as it pertains to the inspection of all businesses at least once before 2008.

**Chart 2: Number of Inspections Conducted by Grantees and CIWMB**

Fiscal Year	Number of Inspections Conducted			
	By Grantees		By CIWMB	
1996/97	*		52	
1997/98	*		97	
1998/99	*		180	
1999/00	*		435	
2000/01	*		336	
2001/02	*		245	
2002/03	1475		188	
2003/04	6611		124	
	< 500 tires	> 500 tires	< 500 tires	> 500 tires
2004/05	7714	26	582	5
2005/06	9072	210	1249	171

\*No information for specific years is available during the grant terms from FY 1996/97 to 2001/02; however, grantees inspected approximately 2000 waste tire sites during this overall timeframe

Out of the 27,556 waste tire business listed in the Waste Tire Management System, 46% or 12,725 businesses have been inspected at least once since July 2004, or within the last two years. If the Grantees and CIWMB staff maintained their current rate of inspecting, the goal of inspecting each business at least once by the end of 2008 should be accomplished on schedule.

**3. *Track and report on identified illegal waste tire sites (through CHP surveillance or local enforcement) to determine if the number is increasing or decreasing on an annual basis.***

Current data available on illegal waste tire piles is reported in terms of illegal tire piles, which resulted in enforcement actions. In FY 2001/02 approximately 22 illegal tire facilities were found; FY 2002/03, 15 facilities; FY 2003/04, 15 facilities; FY 2004/05, 14 facilities; 2005/06, 10 facilities. This data shows and overall decrease in the number of illegal waste tire piles found in California that resulted in enforcement action.

*Note:* These numbers do not represent the waste tire piles that were discovered and the property owners willingly cleaned up the property after being issued a NOV. The Waste Tire Management System, the CIWMB's tire database, have been upgraded to collect inspection data showing the number of illegal tire piles 500 or more waste tires discovered including those that do not result in a Cleanup and Abatement Order; however, reports of this data are not available currently. Additionally, the CIWMB has begun phase two of the Satellite Imagery Project that can identify possible waste tire piles from space. This Project may identify new waste tire pile sites by the next Performance Measure reporting period. Therefore, staff anticipates an increase in the total number of illegal sites discovered.

**4. *Track and report the number of all tire sites, generators, end users, and haulers (whether permitted, exempted/excluded, or illegal) found in violation and brought into compliance as the result of NOVs, cleanup and abatement orders, and administrative complaints.***

The Waste Tire Management System has been upgraded to include inspection and enforcement information; however, detailed reports on inspection data are still unavailable. Currently we are able to track and report on violations after they receive an enforcement order. Otherwise individual violations are currently tracked by individual inspectors at the state and local enforcement level. By the next Performance Measure reporting more complete information will be available.

Currently, the CIWMB collects all violations that are not resolved at the NOV level. The below chart shows, over the last three fiscal years, 43 waste tire sites were found in violation and 32 of them have been cleaned up.

**Chart 3**

FY (the last Order was Issued)	Total Sites in Violation	Sites the Owner Cleaned Up	Sites CIWMB Cleaned Up	Sites still pending Cleanup /Compliance	Total Tires Cleaned Up
2003/04	15	4	8	3*	1,855,700**
2004/05	11	9	2	0	199,083
2005/06	17	7	2	8	17,058

\*These are illegal tire piles in Sonoma County that are currently undergoing environmental review for cleanup next year.

\*\* This large number of tires cleaned up is in part to the 5 Sonoma sites that were cleaned up in 2004 and 2005. The orders for these sites were issued in 2003. The CIWMB was responsible for funding the cleanup for approximately \$1.7 million of these tires.

**5. *Correlate the number of inspections for specific types of facilities and the corresponding number of documented violations, and then establish a baseline by 2007.***

Staff has set up the framework for collecting this data in the Waste Tire Management System; however, detailed information and reports on inspection data including violations and facility type information are unavailable and will most likely not be available until the end of 2007 due to other enhancements that are needed for the system.

**6. *Increase the waste tire enforcement grantee coverage in the state to 80 percent by 2008.***

As of the last Grant Cycle, TEA 12 (FY 2006/07), 79 percent of the state's tire related businesses are covered by grantees. Therefore, the CIWMB is most likely going to meet the above goal. Chart 3 shows the numbers business that each grant cycle has covered and the percentage of the state it covers since grant cycle TEA 8 (FY 2002/03).

**Chart 4: Waste Tire Enforcement Grantees Coverage**

Grant Cycle	Work conducted in Fiscal Year	Number of Grantees	Percentage of California Sites covered by Grantees	Number of inspections conducted by Grantees	Number of Sites Covered by Grantees
TEA 8	2003/04	24	56%	6611	15618
TEA 9	2004/05	36	64%	77401	17829
TEA 11	2005/06	38	77%	9282	21463
TEA 12	2006/07	39	79%	*	21701

\*The TEA 12 grant cycle began in July 2006; therefore, no inspection data is available for this cycle.

**7. *Increase State inspections in the jurisdictions without grantees by 50 percent by 2008.***

Chart 4 shows that State inspection increased 250% in the last year. Since 2001 they have increased 580%. This goal has been obtained.

**Chart 5: Inspections in Jurisdictions without Grants**

Fiscal Year	Inspections By Staff
2001/02	245
2002/03	188
2003/04	124
2004/05	587
2005/06	1420

*Note:* Inspections in 2002, 2003, and the first half of 2004 were low due to a small number of CIWMB staff resources available to focus on expanding the grant program and providing training to the grantees. Since then, the Tire Program obtained two additional staff positions, which is why the number of inspections dramatically increased.

8. *Track the number of inspections conducted in relation to the number of program staff and number of grantee staff and establish a baseline effort by 2007.*

The below chart describes the actual number of inspectors in the field conducting field inspections and assisting grantees. The data for fiscal year 2005/06 will become the baseline. Therefore, staff has met this goal and will continue to track this information.

**Chart 6: Inspections Conducted in Relation to Staff and Grantees**

Fiscal Year	CIWMB Field Staff	Number of Grantees	Inspections by CIWMB	Inspections by Grantees
2002/03	3.5	8	188	1475
2003/04	3.5	24	124	6611
2004/05	6	36	587	7740
2005/06	6.5	38	1420	9282

## **Cleanup Performance Measures**

To evaluate the program's success in achieving its objectives, the following measures were proposed in the July 2005 *Five-Year Plan*.

***1. Complete the long-term waste tire remediation projects by June 2007.***

Site remediation activities at the Westley tire fire site were completed in October 2002. The remediation work was completed in less than three years at a cost of approximately \$17 million. Site remediation activities at the Tracy tire fire site (with the exception of the groundwater monitoring) were completed in May of 2006. The property was recently sold and it will be the responsibility of the new owners to continue any ongoing ground water monitoring at the site if required by the Regional Water Quality or the Department of Toxic Substances Control. The remediation work at the Tracy site was completed in just over three years at a cost of approximately \$19 million. Therefore, this goal has been completed.

***2. Complete the short-term waste tire remediation projects referred by the enforcement program and report status of projects to the CIWMB on an annual basis.***

During 2005 and 2006, all 11 sites of the sites referred by the enforcement program were remediated at a cost of approximately \$3.8 million.

***3. Increase the number of waste tire cleanup grants issued to local governments on an annual basis.***

In FY 2005/06, the Board Awarded 20 grants. There was no increase in grants for FY 2006/07, since the Board again awarded 20 grants. In an effort to better evaluate the performance of this program, it would be more representative to track the number of sites that are remediated under each grant awarded by the Board. Therefore, staff recommends changing this measurement during the next revision of the *Five-Year Plan*.

***4. Increase the number of waste tire amnesty grants issued to local governments on an annual basis.***

In FY 2005/06, the Board Awarded 31 amnesty event grants. In FY 2006/07, the Board awarded 34 amnesty day grants, which is a 9% increase from the previous year.

***5. Increase the percentage of tires remediated through the farm and ranch cleanup grants issued to local governments on an annual basis.***

During FY 2005/06 17,936 tires were collected, compared to 19,463 tires collected in the previous fiscal year; however, the criterion for this grant program does not provide preference to projects that propose to remediate tires. In addition, historically, the tire funds that have been allocated to this program, therefore, staff will coordinating the Board's tire enforcement program to identify sites that could potentially qualify for grant funding under this program. So, in an effort to better evaluate the performance of this program, it would be more representative to track the number of sites that are remediated under each grant awarded by the Board. Therefore, staff recommends changing this measurement during the next revision of the *Five-Year Plan*.

***6. Assess existing tire fire response protocol and update and amend the Uniform Fire Code every five-years in cooperation with the Office of the State Fire Marshall.***

The CIWMB contracted with the Department of Forestry & Fire Protection, Office of the State Fire Marshall (OSFM) to assess the existing tire fire protocol. The protocol was updated and the OSFM provided training to local government fire agencies around the state.

## **Research Performance Measures**

To evaluate the program's success in achieving its objectives, the following measures were proposed in the July 2005 *Five-Year Plan*.

- 1. By September 2008, develop curriculum and continuing education credits at the university level for engineers and public works officials regarding the use of RAC and CE uses for waste tires.***

Staff contacted several universities and colleges regarding this activity and is developing a scope of work. This performance measure is on schedule.

- 2. Support the US-Mexico Border 2012 Program by providing ongoing technical support and educational outreach to Mexican stakeholders as needed.***

The CIWMB continues active participation in the Border 2012 California/Baja California Task Force. Tire Program staff has contracted with the City of San Diego Solid Waste Local Enforcement Agency to identify stakeholders, infrastructure, and barriers. The City of San Diego has participated in several meetings with government and environmental officials from both sides of the border as well as with other stakeholders and is getting a grasp of the existing waste tire issues in the border region, specifically in Tijuana. Although the City's Office of Binational Affairs director position was eliminated this year, it has solicited the assistance of Alejandra Gavaldon, Intergovernmental Relations and Assistant Deputy Director of its Office of Binational Affairs. Ms. Gavaldon's political and cultural experience will be very helpful. This contract will also include an assessment of Mexico's existing regulatory requirements regarding waste tires, and development of an Environmental Outreach Program to inform the communities of Mexico of the health and safety issues associated with waste tires.

CIWMB will continue to collaborate with U.S. EPA and the Border Task Force to help develop community outreach programs to the tire haulers on both sides of the border. The CIWMB conducted training in Mexico for tire haulers and other stakeholders. Additional training and technical support to the Mexican tire haulers, training of the CHP Commercial Officers along the California-Mexico borders of the tire haulers requirements, check points, and identification of illegal tire dumping will be conducted during fiscal year 2007/08. Finally, a contract with San Diego State University Foundation will provide important information on the flow of tires across the border into Mexico and the Satellite Imagery Project will look for illegal tire piles along the border area.

- 3. As needed, investigate and evaluate RAC and CE applications to identify obstacles to increased use.***

Staff is working with the Rubberized Asphalt Concrete (RAC) contractor (MACTEC) and with the Civil Engineering (CE) Applications contractors (Dana Humphrey and SCS Engineering) to identify obstacles for the use of RAC and CE application projects by local governments. One of the major obstacles for both the RAC and CE applications program is lack of familiarity of the benefits of using the technology by the local governments. Staff is now conducting workshops and RAC and CE applications training classes for local governments statewide to educate them on this technology. In fact, it is now required that all local government jurisdictions obtain RAC training as a condition of receiving a grant from the Board. Staff is also coordinating these efforts with the Board's public relations expert (Ogilvy) to identify new local government jurisdictions and facilitate meetings with and technical training for those identified local governments.

- 4. By December 2006, establish a testing and certification program that will expedite the use of new products made from waste tires.***



The activities and funding for Testing and Certification were combined into the Tire-Derived Product Business Assistance Program (BAP). In its first cycle of applications, the BAP will leverage other resources to provide necessary new product testing and certification services to eight different businesses for an estimated \$177,500.

***5. By June 2006, conduct a life-cycle assessment of various waste tire management methods to determine safety, and environmental and economic tradeoffs.***

This activity was cancelled because of statutory limitations regarding the funding of studies that support the incineration of tires.

***6. By December 2006, determine the most accurate method currently available to estimate the number of waste tires generated, diverted, and disposed of.***

The CIWMB has entered into a \$100,000 contract with Sacramento State University to be complete by year end. Sacramento State is gathering data from the Department of Finance and the Waste Tire Manifest Program to complete the report.

## **Market Development Performance Measures**

To evaluate the program's success in achieving its objectives, the following measures were proposed in the July 2005 *Five-Year Plan*.

***1. Increase the percentage of waste tires diverted from landfill disposal from 73.5 percent to 85 percent by 2010.***

The CIWMB is currently building markets through the Tire-Derived Product Business Assistance Program (BAP), Tire-Derived Product grants, RAC grants, and Civil Engineering projects. In 2004, the annual diversion rate was 74.6% and in 2005 it was 75%, which shows a slight increase.

The BAP will help strengthen tire-derived product businesses by improving operational and cost efficiencies, enabling these businesses to increase and expand markets, thereby increasing the diversion of California-generated waste tires. The BAP uses both a contract with experts to provide technical and consultative services to members of the tire-derived product industry, grant agreements for non-cash awards as the vehicle for dispensing those technical and consultative services to individual businesses and grant agreements to provide for reimbursement of specifically identified equipment to some grantees. The Contractor (Beck) also provides technical and consultative services that benefit specific sectors or the industry as a whole. Staff and the Assessment Team identified several areas of common interest and need for the businesses.

The CIWMB also offers several grant programs and contracts to promote markets for recycled-content products derived from waste tires generated in California. Grants are available to certain businesses, other enterprises, qualifying Indian tribes and /or public entities, depending on the specific grant program. Qualifying products are made from recycled 100 percent California waste tires. Examples of these tire-derived products include, but are not limited to RAC, tire-derived aggregate, slurry seal, mulch, bark, weed abatement mats, playgrounds, tracks, and traffic safety products. To date, these and other program efforts have been successful. Diversion rates statewide have increased from 33.4% in 1991 at the programs inception to 75.0% in 2005.

To achieve an 85% diversion rate by 2010, Program efforts will need to focus on enhancing markets in outreach to SUV's and light truck owners, which have a decidedly major part of the market; education in minority communities; and working with the University of California Berkeley's Institute of Transportation Studies.

**2. *Establish a baseline for current usage of RAC by State agencies and local governments by June 2006, and increase the use of RAC by 15 percent by 2010.***

Baseline use of RAC by local governments has not been established. This information is very difficult to obtain and even more difficult to keep current. Staff recommends that a different measure be developed for local government use of RAC. However, local government use of existing CIWMB's RAC grant programs has shown a marked increase over the last year. With regard to state agency, the only state agency required to report usage information to the CIWMB is Caltrans. Assembly Bill 338 (Levine, Chapter 709, Statutes of 2005) mandates that Caltrans increase the percentage of its RAC use in 2010 to 20 percent. Staff further recommends that this performance measure be modified for the next *Five-Year Plan* revision to reflect the realities of available data.

**3. *Establish a baseline for current usage of CE applications by State agencies and local governments by June 2006, and increase the use of CE applications by 10 percent by 2010.***

This technology is still relatively new so there have only been a handful of projects completed by local and state governments to date. Therefore, no meaningful baseline was established for CE applications by June, 2006. Staff is currently working with State and local government on several CE application projects that will be completed in the next 2 years, so there has been significant progress made. However, a meaningful baseline cannot be established for local governments or Caltrans until the technology becomes more widely accepted and more projects are completed. Staff therefore recommends modifying this performance measure to reflect an increase in the number of CE application projects completed by state and local governments during the next revision of the *Five-Year Plan*.

**4. *Establish a baseline for current purchase of tire-derived products (not RAC or material for CE applications) by State agencies and local governments by June 2006, and increase purchases by 15 percent by 2010.***

The State Agency Buy Recycled Campaign (SABRC) requires State agencies and the Legislature to purchase products with recycled content within eleven (11) product categories. One of the eleven is the tire-derived products category that measures the amount of products purchased each fiscal year. This means of measurement has been beneficial; however, in 2004 the passage of AB 79 (Dutra, Chapter 409, Statutes of 2004) put a moratorium on the submittal of SABRC reports until January 1, 2008. This has impacted the CIWMB's ability to measure, through State agency purchasing habits, the effectiveness of the CIWMB's efforts to increase the purchasing of tire-derived products. The most current data, representing the State of California, is from the 2003/04 fiscal year. By analyzing the available data from 2003/04 the following can be ascertained:

Fiscal year 2003/04 will be the baseline year. During this period, State agencies reported that of the \$2,292,840.40 spent on tire-derived products, \$2,008,825.84 (87.6 percent) was spent on recycled content products. State agencies also reported spending \$636,085.42 on tires 15 inches or smaller. Of this amount, \$24,429.37 (0.9 percent) was spent on retreaded tires, and \$2,906,716.97 was spent on tires larger than 15 inches. Of the amount spent on tires larger than 15 inches, \$616,102.78 (15.4 percent) was spent on retreaded tires.

It must be noted that in 2005 SB 1106 (Committee on Environmental Quality, Chapter 590, Statutes of 2005) was passed taking effective on January 1, 2006. Through this legislation, the implementation of the SABRC program was transferred from the Department of General Services (DGS) to the CIWMB. As part of the implementation of SB 1106, the CIWMB in cooperation with DGS has developed and implemented an electronic reporting system. The reporting system has integrated the State Contract and Procurement Registration System (SCPRS), DGS web application that collects information on procurements over \$5,000, with a CIWMB SABRC developed application. Integration of these two reporting systems will provide agencies a single point of entry

for their mandatory reporting on procurement and SABRC, while increasing the overall accuracy of dollars spent within the tire-derived product category.

Staff was not able to establish a baseline for local government purchases of tire-derived products by June of 2006. The reason this measure could not be met was because local governments have very diverse accounting systems, and they don't necessarily capture the information we need to establish a baseline. Furthermore, they have little incentive to provide this type of information to the CIWMB. However, since the goal of this performance measure was to determine the level of impact CIWMB outreach and grant programs have on local government purchases, staff conducted a survey to meet that goal at least in part.

Staff surveyed local government entities who received grants in FY 05/06. The survey was designed to determine whether the grantee had or would purchase tire-derived products using their own funds as a result of being exposed to these products through the grant program. The results of the survey are as follows: forty-five percent (45%) said they had already purchased tire-derived products. Of the Fifty-five percent (55%) that said they had not, seventy percent (70%) said they would purchase tire-derived products in the near future. In addition, seventy-seven percent (77%) said they were very satisfied with the tire-derived product, and twenty-two percent (22%) said they were satisfied with the tire-derived product. Since it is not feasible to establish a baseline, staff recommends that the Performance Measure for Local Government be changed to an annual purchasing and satisfaction survey of local government grantees.

CIWMB grantees are required to complete a Recycled-Content Certification Form (CIWMB 74G) as specified in their grant agreements. During FY 2004/05 grantees purchased \$2,553,433 of tire-derived products. At this time, FY 2005/06 data is not available.

Staff recommends modifying this performance measure to reflect the available information and how best program success can be measured within this activity.

***5. Provide business assistance services to 25 businesses and document successes and obstacles by 2010.***

At its August 15, 2006 meeting, the CIWMB approved \$1,767,500 in grants to provide technical and consultative services and reimbursement for specifically identified equipment to 19 businesses. Similar results are anticipated for the next application cycle in early 2007. The businesses provide baseline financial and performance information and agree to provide annual updates for five years to measure the performance of the BAP.

***6. Reduce the number of waste tires generated in California from 1.1 to 0.9 per person per year by 2010.***

The rate of tire generation remained at 1.1 for fiscal year 2006/07. While no change in generation has occurred, the CIWMB has a contract to support purchase of longer lived tires and better maintenance of tires, and has a contract with Tire Retread Information Bureau for supporting the use of retreaded tires. Staff anticipates that this measure will be met on schedule.

***7. By 2010, increase the percentage of Californians who purchase longer-lived tires and properly maintain their tires by 20 percent using the baselines established in the CIWMB publication entitled Consumers' Tire-Buying Habits and Their Knowledge of Tire Maintenance, Recycling, and Disposal (Publication #622-03-004).***

The CIWMB has entered into a contract with a public relations firm to conduct statewide outreach to a variety of communities, which is designed to help achieve this performance measure. Additionally, a new outreach effort is being planned to focus on light truck and SUV owners to encourage them to purchase longer-lived tires and to maintain their tires properly to increase life. Staff suggests

including a study to measure the success of this performance measure in the next version of the *Five Year Plan*.

**8. *Increase the promotion of tire-related resources and haulers listed in the CalMAX publication and website by conducting focused outreach by 2007.***

In the CIWMB Spring and Summer CalMAX 2005 catalogs, staff published a list of "Waste Tire Haulers and Retreaders" to publicize information for the Tire Program. To reduce paper waste and costs, those were the last CalMAX catalogs printed. CalMAX is now solely web based and will continue to have the "Tire" list on its website.

With regards to actual listings, we have only one tire listing in CalMAX at this time. Currently the procedure for listing tire ads in CalMAX is to first send listings to the tire program to make sure that person or business has the proper documentation to be a tire hauler. There have been several potential tire listings that were not "signed-off" by tire staff because of proper documentation could not be identified, thus those listings did not appear in CalMAX.

Since this program has not resulted in significant tire listings, staff recommends that tire funding be withdrawn in the next revision of the *Five-Year Plan* and this performance measure be removed.

**9. *Measure the number of businesses applying for the Waste Reduction Awards Program (WRAP) that are using auto and tire-related resources by 2007.***

In 2005, the WRAP program processed 213 applications that won awards. The following two questions from the application addressed the topic of special waste. The baseline (question) for WRAP measurement with regards to automotive-related resources was written as follows.

**Special Waste and Vehicle Efficiency Questions**

14. [i] Company cars and vehicle fleets can be hidden generators of solid waste and other special wastes—everything from tires and trim to fluids and filters. What consideration does your organization give to managing the vehicles in a more environmentally sound manner? Describe how your organization uses recycled-content products or extends the life of tires and oil. For example, the use of retread or high-mileage tires, re-refined oil, high-efficiency oil filters, proper interval oil changes, and non-mercury switches are more environmentally sound considerations.

15. [i] Has your organization adopted a business policy managing company vehicles and/or special wastes in a more environmentally sound manner? If so, please attach a copy of the policy to your application package.

Analyzing the data collected (manually) from these 213 applicants, it is determined that 79 businesses are taking steps to manage their tires and oil in an environmentally efficient manner. Additionally, 20 businesses have a policy in place to manage company vehicles and/or special waste. However, 134 businesses (out of the 213) are not taking any steps in this direction. For example, some do not have company vehicles, and/or special waste doesn't apply to their business at all. Additionally, 193 businesses (out of the 213) did not specify if they have a program in place and/or provided general responses without regard to a policy.

**Chart 7: WRAP Data**

2005 Responses	Question #14	Question #15
Y	79	20
N	5	147
N/A	51	45
Not Clear	78	1

This performance measure has been met.

**10. Maintain at least 10 percent of the number of vendors that display tire-derived products at the CIWMB's annual recycled product trade show.**

The CIWMB discontinued the Recycled Product Trade show in August 2005 and did not use the FY 2005/06 tire allocation. Staff recommends that this performance measure be removed during the next revision of the *Five-Year Plan*.

**11. Establish a baseline for the average number of tires used in green building grants.**

The Board voted not to award the Green Building grants/contracts for FY 2004/05 and never formally considered using the allocation for FY 2005/06. Staff recommends that this performance measure be removed during the next revision of the *Five-Year Plan*.

## **Hauler and Manifest System Performance Measures**

To evaluate the program's success in achieving its objectives, the following measures were proposed in the July 2005 *Five-Year Plan*.

1. ***By December 2006, determine the percentage of identified waste and used tire generators, haulers, and end-use facilities that are not submitting manifest information or that are showing discrepancies.***

Waste Tire Management System (WTMS) reports indicate that 6,779 out of 16,030 (42%) facilities that show active status are not submitting the required manifest information to the CIWMB. This large percentage may be explained by the fact that some generators could be removing less than 10 waste/used tires at a time, which does not require the use of a CIWMB Registered Waste Tire Hauler and Manifest System. There also may be many of these locations that have either duplicative Tire Program Identification (TPID) numbers or may be out of business. Verification of these latter issues will be confirmed through local and statewide inspections by CIWMB staff and enforcement grantees over the next year.

Although training venues and training materials have been provided in both in English and Spanish to the waste tire hauler community since the implementation of the Comprehensive Trip Log form in July 2005, WTMS is showing only about 8% of the hauler population is submitting these forms without errors. Overall, the error rate has dropped since the implementation of the CTL; however, continued manifest training is still required and upcoming enforcement actions may be the only effective approach in having the haulers accurately complete the CTL forms. A comparison survey showed between July 1, 2003 and July 1, 2004 (for the manifest form) and July 1, 2005 to July 31, 2006 (for the CTL forms), the percentage of manifests forms with priority 1 errors showed 23.9%, while the percentage of CTLs with priority 1 errors only showed 6.8% signifying that there are less mistakes being created now, but much more training is still needed. Program staff is now in the process of sending reviews to the "Top 50 Offenders" of the manifest system, and requesting them to



contact program staff to go over some of the errors. In the very near future, a fully narrated PowerPoint presentation on CD for the haulers concerning the step by step completion of the CTL form will be available. Additionally, CIWMB enforcement staff and their Enforcement Grantees are conducting trainings when visiting waste tire haulers to ensure the compliance.

**2. *By 2006, determine the percentage of waste tire enforcement program cases where the manifest system information has been used to assist CIWMB staff and local enforcement agencies.***

Since the inception of the California Uniform Waste and Used Tire Manifest System in July 2003, program staff has been tracking the use of the manifest system as it related to enforcement actions against waste tire haulers or generators. From July 1, 2003 to present, both the Hauler & Manifest program and Tire Enforcement Program have taken legal action against 25 waste tire haulers and 20 waste tire locations. In all but a few instances, staff reviewed information provided by the manifest system, to varying extents; therefore the percentage of use for enforcement would be above 98%.

**3. *By 2006, track the number of penalties levied for violations of the PRC pertaining to waste and used tire hauling.***

Since the implementation of the Manifest program in 2003, the Hauler & Manifest program and the Tire Enforcement program have taken legal action against 25 waste tire haulers, with total assessed penalties of \$126,950 and an additional \$95,800 held in abeyance should any of these haulers fail to comply with the hauler requirements.

**4. *In 2006, determine the number of identified used and waste tires generated, using CIWMB's historical data that reported under the paper and electronic manifest systems.***

The intent of this performance measure was to determine if by using the manifest, both paper and electronic reporting, staff could determine the number of tires generated in California during a particular year. The outcome of this attempt was not successful as the manifest system requires anytime that a tire is handled and transported, a manifest form must be completed. The result will show that the average tire may be generated anywhere from a single trip to multiple trips. This can be depicted by the following scenario: A waste tire hauler picks up a load of waste tires and transported them back to his shop, under manifest, where he will cull through the pile and salvage the good used tires. He will then re-load the good used tires back onto his truck and transport them, under manifest, to his customer locations. These tires are sold to the customer at the main store location, but now the customer will transport the same tires to a satellite shop, under manifest. The same tire was manifested on three different trips, showing three different generators and three different end use facilities. What this performance measure may reveal instead is how much more the used tire may be moved or relocated versus the junk tire destined for disposal. The table below shows this variable over the past 3 years.

Year	Pick-ups	Deliveries	Total Transactions	Tires Generated	Variable
2003	31,428,969	50,350,493	81,779,462	39,000,000	2.1
2004	55,585,927	95,427,610	151,013,537	40,200,000	3.76
2005	93,711,619	123,437,471	217,149,090	40,800,000	5.32

**5. *By December 2006, determine the quantity of waste or used tires being picked up or delivered for each county and through the borders of the state.***

As listed below, here are the quantities of waste or used tires picked-up and delivered within each county for the calendar year 2004, 2005 and partial year 2006:



**Chart 9: Quantities of Waste Tires Picked-up and Delivered within Each County**

County	2004		2005		2006	
	Pickup	Delivery	Pickup	Delivery	Pickup	Delivery
Alameda	1,834,874	2,819,353	1,543,300	2,167,583	1,894,900	1,097,163
Alpine	330	0	159	0	0	0
Amador	26,567	806	59,652	0	60,443	0
Butte	246,379	32,126	217,280	56,240	153,965	2,178
Calaveras	50,342	364	239,671	3,967	18,298	18,294
Colusa	0	41,351	59,834	0	27,904	40
Contra Costa	692,700	9,730	2,408,616	405,007	702,139	70,891
Del Norte	11,323	0	12,692	0	7,342	0
El Dorado	107,706	163	272,038	0	129,478	0
Fresno	2,200,790	463,782	1,976,946	2,506,706	884,897	281,261
Glenn	98,627	879,522	127,300	1,044,208	92,390	7,737,614
Humboldt	196,075	2,011	180,062	3,952	101,080	5,324
Imperial	300,912	396,054	253,159	496,285	333,065	618,168
Inyo	50,293	5,500	17,478	33,100	44,913	12,380
Kern	2,198,073	8,422,304	1,622,706	9,294,261	1,040,262	5,192,425
Kings	197,169	10,835	180,857	151,247	132,405	215,365
Lake	57,323	3,104	82,186	3,492	43,177	2,858
Lassen	51,443	14,268	66,540	22,324	32,456	5,294
Los Angeles	23,003,910	27,931,284	17,724,577	26,747,468	10,172,149	15,738,055
Madera	295,704	24,247	385,173	452,502	227,571	53,853
Marin	215,840	4,364	339,103	48,301	166,221	21,600
Mariposa	10,190	0	23,420	0	7,463	0
Mendocino	104,175	26,289	102,903	17	57,011	1,100
Merced	6,229,391	6,718,182	4,514,659	8,216,042	2,996,171	4,818,742
Modoc	9,523	0	10,400	1,600	6,441	0
Mono	12,241	0	6,010	0	7,478	0
Monterey	316,955	782,618	1,863,550	40,198	150,473	2,963
Napa	85,389	1,733	109,425	1,297	68,653	6,895
Nevada	93,626	153	226,984	4,447	79,014	17
Orange	2,168,113	169,551	1,875,434	414,530	4,068,898	46,376
Placer	333,850	2,748	3,600,610	33,940	621,861	6,152
Plumas	15,073	8,000	36,115	0	7,717	439
Riverside	2,266,152	2,081,108	2,113,115	426,047	1,498,534	211,825
Sacramento	2,440,139	11,334,820	32,358,537	95,270,439	4,831,421	12,108,606
San Benito	34,108	315	27,479	0	14,529	175
San Bernardino	4,665,608	13,517,162	5,270,959	8,362,750	15,026,640	3,790,233
San Diego	4,768,134	1,905,208	2,260,877	2,531,336	3,401,980	4,194,009
San Francisco	309,418	12,841	230,830	313,856	130,772	5,069
San Joaquin	1,054,392	4,220,170	1,476,432	5,314,400	826,293	3,166,885
San Luis Obispo	296,762	352,202	219,147	326,798	133,483	267,657
San Mateo	503,158	1,186	577,706	7,609	312,894	1,438
Santa Barbara	420,072	360,421	340,308	1,801,940	199,922	3,026,899
Santa Clara	1,409,424	31,243,083	1,798,271	24,026,294	920,904	3,235,711
Santa Cruz	189,247	1045	156,973	7,636	95,911	5,438
Shasta	486,327	4,676,995	594,167	1,363,645	225,107	1,030,351
Sierra	2,200	0	0	0	0	0
Siskiyou	50,135	891	53,185	806	28,044	257
Solano	414,174	16,215	2,057,075	10,232	662,078	11,685

Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

Sonoma	1,384,253	135,939	1,369,545	1,742,609	536,463	265,064
Stanislaus	3,689,450	62,789	2,629,675	162,133	780,948	2,723,158
Sutter	90,441	2,802	1,039,014	2,885	225,678	1,736
Tehama	172,693	30,279	527,100	48,163	180,787	78,945
Trinity	1,980	753	9,562	48	0	6,800
Tulare	685,293	626,110	1,556,770	912,591	606,683	51,368
Tuolumne	101,883	118	170,409	0	60,630	0
Ventura	1,342,282	267,584	1,108,621	3,159,228	41,353,616	28,918,204
Yolo	415,423	12,197,028	9,252,080	50,204,607	1,075,631	5,918,383
Yuba	53,869	9,344	325,660	8,967	95,672	95,708
<b>Totals</b>	<b>68,461,923</b>	<b>131,826,850</b>	<b>107,662,336</b>	<b>248,153,733</b>	<b>97,560,855</b>	<b>105,071,051</b>

Information to determine the quantity of waste or used tires being picked up or delivered through the borders of the state is currently being calculated through a contract with San Diego State University Foundation. This information will be available next fiscal year.

Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

# **Table: Fiscal Year 2005/06 Funding Allocated and Amounts Spent**

Note: Items in *italics* were not listed in the July 2005 Five-Year Plan. Items in shaded cells indicate programs managed by CIWMB divisions other than the Special Waste Division, which the Tire Program is a part of.

<b>Program</b>	<b>Allocated</b>	<b>Remaining</b>	<b>Reallocated*</b>	<b>Total Spent</b>
<b>ENFORCEMENT</b>				
Surveillance & Enforcement Assistance	\$350,000			\$350,000
CDAAs Enforcement Case Assistance	\$100,000			\$100,000
Waste Tire Enforcement Grants	\$6,000,000	\$332,505		\$5,667,495
Database Development	\$100,000			\$100,000
<b>Subtotals</b>	<b>\$6,550,000</b>	<b>\$332,505</b>		<b>\$6,217,495</b>
<b>REMEDIATION</b>				
Long Term Remediation	\$1,300,000		\$400,000	\$1,700,000
Short Term Remediation	\$1,500,000			\$1,500,000
Cleanup Grants	\$1,000,000	\$221,956		\$778,044
Amnesty Grants	\$1,000,000	\$191,212		\$808,788
Emergency Reserve	\$1,000,000	\$1,000,000		
Farm and Ranch Grants	\$333,000			\$333,000.
<b>Subtotals</b>	<b>\$6,133,000</b>	<b>\$1,413,168</b>	<b>\$400,000</b>	<b>\$5,119,832</b>
<b>RESEARCH</b>				
Border Outreach Activities	\$75,000			\$75,000
Tire-Derived Product Testing & Certification	\$300,000			\$300,000
Life-Cycle Assessment	\$250,000	\$250,000		
Generation & Diversion Study	\$100,000			\$100,000
Identifying Market Demand for Tire-Derived Products	\$250,000	\$250,000		
<b>Subtotals</b>	<b>\$975,000</b>	<b>\$500,000</b>		<b>\$475,000</b>
<b>MARKETS</b>				
National Product Stewardship Institute	\$10,000			\$10,000
Social Marketing Campaign	\$300,000			\$300,000
Target RAC Incentive Program	\$3,827,000		\$53,000	\$3,880,000
Civil Engineering Grants and Contracts	\$500,000			\$500,000
Tire Derived Product Grants	\$1,792,818		\$2,355,790	\$4,148,608
Tire Business Assistance Program	\$1,500,000			\$1,500,000
Targeted Outreach for Tire Derived Products	\$400,000			\$400,000
Support of other CIWMB Market Development Activities	\$515,000	\$470,000		\$45,000

Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

Program	Allocated	Remaining	Reallocated*	Total Spent
Tire Forums	\$100,000			\$100,000
RAC Technology Centers	\$250,000	\$200,000		\$50,000
State Agency Partnerships	\$400,000			\$400,000
Kuehl RAC Grants	\$1,663,000		\$72,742	\$1,735,742
<i>International Asphalt Rubber Conference</i>			\$50,000	\$50,000
<b>Subtotals</b>	<b>\$11,257,818</b>	<b>\$670,000</b>	<b>\$2,531,532</b>	<b>\$13,119,350</b>
<b>TIRE HAULER PROGRAM AND MANIFEST SYSTEM</b>				
Hauler Program and Manifesting Expenses	\$550,000	\$200,000		\$350,000
<b>Subtotals</b>	<b>\$550,000</b>	<b>\$200,000</b>		<b>\$350,000</b>
<b>Grand Totals</b>	<b>\$25,465,818</b>	<b>\$3,115,673</b>	<b>\$2,931,532</b>	<b>\$25,281,677</b>

\* Reallocation of Fiscal Year 2005/06 Funding: In December 2005 the Board approved the reallocation of \$400,000 to the Long-Term Remediation Projects. In April 2006, the Board approved the reallocation of \$72,742 to the Kuehl Rubberized Asphalt Concrete Grant Program. Further, in May 2006, the Board approved the reallocation of \$2,458,790 of fiscal year 2005/06 funding that remained unspent. At that meeting, the Board reallocated funding to three projects. Of these three projects, one was not listed in the previous version of the Five-Year Plan and is listed in italics.

## Appendix B: Legislative History

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The following section describes major legislation that affects the CIWMB's Waste Tire Recycling Management Program.

**1989:** To address the need for better waste tire management in California, the Legislature enacted Assembly Bill (AB) 1843 (Brown, Chapter 974, Statutes of 1989) known as the California Tire Recycling Act, which promoted recycling of the annual flow of waste tires, as well as stockpiled tires. The act specified that the program promote and develop markets as an alternative to landfill disposal and stockpiling of whole tires. To accomplish these provisions, the act allowed the CIWMB to award grants and loans to businesses, enterprises, and public entities involved in tire recycling activities. It also required the CIWMB to develop waste tire facility regulations for the safe storage of waste tires and established a permitting system for waste tire facilities. A \$0.25 fee on waste tires left for disposal funded these programs. The fee was to be deposited in the California Tire Recycling Management Fund and appropriated to CIWMB annually by the Legislature.

**1993:** As an additional effort to ensure waste tires are disposed of at authorized sites, Senate Bill (SB) 744 (McCorquodale, Chapter 511, Statutes of 1993) was enacted, creating the CIWMB's waste tire hauler registration program. This program is also financed through the California Tire Recycling Management Fund.

**1996:** To change the point of collection from a return fee to a fee on purchased retail tires, AB 2108 (Mazzoni, Chapter 304, Statutes of 1996) was enacted. This bill also provided for any traffic or peace officer to enforce the waste tire hauler registration requirements, thus causing further reduction of the illegal hauling and disposal of waste tires.

**1998:** AB 117 (Escutia, Chapter 1020, Statutes of 1998) was enacted to extend the sunset date for the California Tire Recycling Act, including fee provisions, from June 30, 1999, to January 1, 2001, AB 117 (Escutia, Chapter 1020, Statutes of 1998) was enacted. AB 117 also required the CIWMB to submit a preliminary and final waste tire report by May 1, 1999 and June 30, 1999, respectively, to the Governor and the Legislature. The resulting report published in June 1999 and entitled *California Waste Tire Program Evaluation and Recommendations: Final Report* (Pub. #540-99-006), included recommendations needed to address such waste tire issues as elimination of waste tire stockpiles; protection of public health, safety, and the environment; and an increase in sustainable economic markets for waste tires in California.

**1999:** To provide access for cleanup, abatement, and remediation purposes to a property that contains unlawfully disposed of waste or used tires when the owner does not voluntarily consent to such access, SB 1055 (Bowen, Chapter 292, Statutes of 1999) was enacted, which added section 42846.5 to the Public Resources Code. Specifically, a property owner is required to allow the CIWMB or its contractor reasonable access to perform activities necessary to clean up, abate, or otherwise remedy illegally stored, stockpiled, or accumulated waste tires on the property if an order setting civil liability has been issued and the CIWMB finds that there is a significant threat to public health or the environment.

**1999:** SB 115 (Solis, Chapter 690, Statutes of 1999), also known as the California Environmental Justice Act, was enacted. The California Environmental Justice Act requires the Office of Planning and Research, in consultation with State agencies, local agencies, and affected communities, to develop a State interagency environmental justice strategy that addresses any disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority populations and low-income populations. In addition, the act requires each State agency to make the achievement of environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in California.

**2000:** SB 876 (Escutia, Chapter 838, Statutes of 2000) was enacted as a comprehensive measure to extend and expand California's regulatory program related to the management of waste and used tires. The measure's key provisions include the following:

1. Increasing the tire fee from \$0.25 to \$1.00 per tire (bringing California in line with other large states) until December 31, 2006, and reducing it to \$0.75 thereafter.
2. Extending the California tire fee to tires on new motor vehicles.
3. Revising the definition of "waste tire" and adding other definitions designed to provide regulatory relief for several thousand used tire dealers and waste tire recyclers.
4. Expanding the tire manifest system.
5. Increasing funding for recycling and recovery efforts.
6. Strengthening enforcement by making changes to the waste tire hauler and waste tire facility permit programs.
7. Developing a five-year plan to implement the provisions of SB 876.

**2001:** SB 649 (Committee on Environmental Quality, Chapter 625, Statutes of 2002) was enacted to provide cost recovery from property owners for costs and damages incurred by the CIWMB.

**2001:** SB 828 (Alarcon, Chapter 765, Statutes of 2001) was enacted to create deadlines for the Working Group on Environmental Justice and require all boards, departments, and offices within the California Environmental Protection Agency (Cal/EPA) to review their programs, policies, and activities and identify and address any gaps related to environmental justice, SB 828.

**2002:** SB 1346 (Kuehl, Chapter 671, Statutes of 2002) was enacted to encourage the use of rubberized asphalt concrete (RAC) in public works projects and assist with establishing markets for waste tires. The measure provides authority until June 30, 2006, to the CIWMB, which may implement a program to award grants to cities, counties, districts, and other local government agencies for the funding of public works projects that use RAC. Grants shall be awarded to projects that are projected to generate between 2,500 and 20,000 tons of RAC during the life of the project and that will use 20 pounds or more of crumb rubber per ton of RAC. To the extent possible, depending on the number of qualified applications and whether there is sufficient supply of crumb rubber, funds allocated shall be equal to 16 percent of the funds budgeted in the *Five-Year Plan* for market development and new technology activities.

**2003:** AB 1756 (Budget Committee, Chapter 228, Statutes of 2003) was enacted to prohibit the CIWMB from providing support to efforts related to the use of waste tires as fuel.

**2003:** AB 844 (Nation, Chapter 645, Statutes of 2003) was enacted to require the California Energy Commission, in consultation with the CIWMB, to adopt by July 1, 2007, and implement by July 1, 2008, a replacement tire efficiency program of statewide applicability for replacement tires for passenger cars and light trucks. Further, this program must ensure that replacement tires sold in the State are at least as energy efficient, on average, as the tires sold as original equipment on these vehicles in the State.

**2004:** AB 923 (Firebaugh, Chapter 707, Statutes of 2004) was enacted to increase the amount every person who purchases a new tire shall pay on or after January 1, 2005, to \$1.75 and to decrease the amount on or after January 1, 2007, to \$1.50. Commencing January 1, 2005, and until December 31, 2006, \$0.75 of every tire fee imposed shall be transferred by the State Board of Equalization to the Air Pollution Control Fund. Commencing January 1, 2007, the State Board of Equalization shall transfer \$0.50 of every tire fee imposed to the Air Pollution Control Fund. The Air Resources Board (ARB) shall expend funds to local air districts for programs and projects that mitigate or remediate air pollution caused by tires in the state. This disbursement will continue until the ARB or the local districts determine that the program or projects remediate air pollution harms created by tires. This bill will sunset on January 1, 2015.

**2005:** AB 338 (Levine, Chapter 709, Statutes of 2005) was enacted to require the California Department of Transportation to use, in its highway construction and repair projects, asphalt containing crumb rubber,



Note: This report to the California Legislature has been approved by the CIWMB and is currently under review by Cal/EPA and the Governor's office. When this review is complete, the report will be submitted to the Legislature and published as a final report. Until that time, the report must still be considered a draft document and shall not be quoted or cited as reflecting official CIWMB policy or position.

the amount of asphalt paving materials containing crumb rubber, on and after January 1, 2007, to be not less than 6.62 pounds of CRM per metric ton of the total amount of asphalt paving materials used; on and after January 1, 2010, to be not less than 8.27 pounds of CRM per metric ton of the total asphalt paving materials used; on and after January 1, 2013, to be not less than 11.58 pounds of CRM per metric ton, unless the department delays the implementation of these requirements, pursuant to a specified procedure. In addition, it requires the Secretary of Business, Transportation and Housing, on or before January 1, 2009, and on or before January 1 annually thereafter, to prepare a specified analysis comparing the cost differential between asphalt containing crumb rubber and conventional asphalt, including specified information.

**2005:** AB 1249 (Blakeslee, Chapter 404, Statutes of 2005) was enacted to require the CIWMB, in consultation with the Office of Environmental Health Hazard Assessment, to adopt emergency regulations setting forth procedures and requirements necessary to obtain a major waste tire facility permit. The bill requires the State Fire Marshal, in consultation with the CIWMB, to adopt fire prevention regulations for a major waste tire facility. The bill also requires the major waste tire facility permit regulations to include, by reference, the fire prevention regulations adopted by the State Fire Marshall.

**2005:** AB 1803 (Committee on Budget, Chapter 77, Statutes 2005) was enacted to delete the reduction of the California tire fee to \$1.50 per tire on and after January 1, 2007, and instead, maintain the California tire fee at \$1.75 per tire until January 1, 2015.

**2005:** SB 772 (Ducheny, Chapter 214, Statutes of 2005) was enacted to require the CIWMB to include in the *Five-Year Plan* specified border region activities, conducted in coordination with the California Environmental Protection Agency, including training programs, environmental education, development of waste tire abatement plan, tracking tire flow across the border, and coordination with border region businesses regard to uniform application of environmental and control requirements throughout the border region.

**2006:** The CIWMB currently awards grants of up to \$50,000 to cities, counties, districts, and other local governmental agencies for the funding of public works projects that use rubberized asphalt concrete and meet specified qualifications, including that the project will use between 2,500 and 20,000 tons of rubberized asphalt concrete and 20 pounds or more of crumb rubber per ton of rubberized asphalt concrete. SB 369 (Simitian, Chapter 300, Statutes of 2006) was enacted to revise the eligibility qualifications for those public works grants to instead require the project to use at least 1,250 tons of rubberized asphalt concrete. In addition, it requires the CIWMB to annually calculate the amount of a grant based on the amount of rubberized asphalt concrete used on a project, and would increase the maximum amount of grant money that can be awarded to \$250,000. This bill would recommence the grant program on January 1, 2007, and would make the program inoperative on June 30, 2010. The bill would extend the repeal date to January 1, 2011.

**2006:** Beginning January 1, 2008, pursuant to AB 1144 (Harman, Chapter 470, Statutes of 2006), Playground Safety Standards and commencing with Health and Safety Code Section 115725, all new playgrounds open to the public built by a public agency or any other entity shall conform to the playground-related standards set forth by the American Society for Testing and Materials and the playground-related standards set forth by the United States Consumer Product Safety Commission. No state funding shall be available for the operation, maintenance, or supervision of the playground unless the playground conforms to the applicable requirements. In addition, grant-funded projects must meet all applicable local, State and federal regulations and requirements associated with the products being purchased with grant funds.

## **Appendix C: California Waste Tire Generation, Markets, and Disposal: 2005 Staff Report**

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(CIWMB pub. #620-06-017)

### ***Introduction***

California is faced with the challenge of safely managing 40.8 million reusable and waste tires generated annually in the state. In addition, an estimated 1.5 million tires remain in unpermitted stockpiles in California. In 2005, the state nearly tripled the number of waste tires that were diverted in 1990.

However, the number of waste tires generated annually continues to exceed the number of tires diverted. California Integrated Waste Management Board (CIWMB) staff estimated that in 2005, 30.6 million of the 40.8 million reusable and waste tires generated (75 percent) were diverted from stockpiling or disposal.

This report focuses only on waste tires generated and markets for these tires. The report provides estimates of reusable and waste tire generation, consumption, and disposal in California for 2005. For additional information on the CIWMB tire program, please visit our website at [www.ciwmb.ca.gov/Tires/](http://www.ciwmb.ca.gov/Tires/).

### ***Estimate of Waste Tires Generated***

California has struggled with the task of estimating how many waste tires have been generated during the calendar year. During the years between 1990 and 2000, CIWMB used the factor of 0.915 tires per person per year, which was developed by an industry survey in 1991 and 1992.

In 2001, CIWMB staff reassessed the validity of this method of calculating the generation rate and determined that the 0.915 factor needed to be updated. Staff therefore selected the number 0.958 as the waste tire generation factor for 2001 and 2002.

This number is halfway between the previous California factor of 0.915 and the U.S. factor of 1. For 2003, to calculate the number of reusable and waste tires generated in the state, CIWMB primarily used population statistics and State industry trends and approximations.

Because of the changing economic infrastructure and the variety of tire-derived products available on the market, staff determined that the adjustment factor should be slightly higher than the U.S. Environmental Protection Agency (U.S. EPA) number. The U.S. EPA calculates the number of waste tires by using the formula of one waste tire per person per year to obtain an average for the nation.

Based on a survey of major industry stakeholders and on other available sources, CIWMB staff estimated that of the approximately 40.2 million reusable and waste tires generated in 2005, approximately 30.6 million of the tires (75 percent) were diverted through various alternatives, including reuse, retreading, and combustion. Table 1 and Figure A present waste tire generation, diversion, and disposal in California for 2005.

Further, because of the lack of a uniform reporting system in past years on tire recycling activities in California, CIWMB has also relied on estimates to quantify tires recycled or diverted from landfill disposal and stockpiling. Staff arrived at these estimates by using information from industry contacts that transport, process, and/or recycle large quantities of waste tires.

For more accurate data to estimate the future waste tire generation, diversion, and disposal, CIWMB has awarded a contract to California State University of Sacramento to conduct "A Waste Tire Generation and Diversion Data Study."

## **Markets for Waste Tires**

### ***Reuse***

An alternative to disposal is tire reuse. After the purchase of new tires, the remaining reusable tires that still have a legal tread depth can be resold by a dealer, rather than being disposed of or recycled prematurely. Based on information from industry contacts, 1.2 million tires, or 3 percent of the estimated 40.8 million reusable and waste tires generated in 2005, were reused.

### ***Crumb Rubber, Rubberized Asphalt Concrete, Alternative Daily Cover, and Civil Engineering Uses***

Based on information from industry contacts, CIWMB staff estimated about 3.2 million tires were used to generate crumb rubber to manufacture crumb rubber products,<sup>‡</sup> including playground cover, speed bumps, carpet tile, mats, sound walls, and other various cut, stamped, or molded products.

In addition, 2 million tires were used for rubberized asphalt concrete (RAC). Staff estimates 6.7 million tires were used for other activities, including 4.7 million tires for alternative daily cover (ADC). Approximately 2 million tires were used for civil engineering projects, such as landfill gas collection trenches, lightweight fill, and a levee reinforcement project.

### ***Recycling and Other Uses***

Staff estimated that 3.2 million waste tires were recycled (and used in products such as those made from ground rubber products) and put to other uses (such as agricultural uses).

### ***Retreading***

Tire retreading is a viable option for renewing reusable tires by reusing the tire casing after the legal tread has worn off. Based on surveys, industry contacts, and information obtained from the Tire Retread Information Bureau (TRIB—[www.retread.org](http://www.retread.org)), there are 59 active retread plants in California. These plants sold an estimated 757,000 retreads in 2005. Most of these retreads were medium- and light-truck tires, with a very small percentage for industrial, farm, small aircraft, and passenger tires. Using an average weight of 120 pounds per medium-truck tire for retreads, CIWMB staff has determined that in 2005, approximately 4.4 million passenger tire equivalents (PTE) were retreaded tires sold in California.

### ***Exported Tires***

Tire export (both reusable and waste tires) reduces the number of tires requiring eventual disposal in California. According to industry contacts and staff estimates, approximately 2.3 million reusable and waste tires were exported in 2005.

### ***Combustion***

Tire combustion significantly reduces the number of tires requiring landfill disposal or stockpiling. In 2005, about 9.1 million tires were combusted as fuel in California (7.4 million were consumed by the cement manufacturing industry, and 1.7 million were consumed by a cogeneration plant in Stockton).

### ***Imported Tires***

CIWMB staff estimates that in 2005, approximately 1.5 million waste tires were imported into California for recycling from Utah, Oregon, Nevada, Arizona, and Canada. Imported waste tires were used in combustion as a fuel supplement and to generate crumb rubber. Imported tires have also been disposed of in landfills.

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<sup>‡</sup> In actuality, more tire rubber is used for RAC or crumb rubber products. However, the extra rubber used consists of tire buffings from tire retread operations. These tires are already accounted for as retreaded tires.

While not all disposal facility operators kept track of data on imported tires disposed of in landfills in 2005, staff is now working with industry to track these imports more accurately. The interstate transport of waste tires is market-driven; neither State nor local governments can regulate import and export of tires. Factors influencing importation are geographic proximity to end users and subsidies provided by other states or countries to facilitate collection, recycling, and disposal of waste tires.

## **Summary**

Figure A displays information pertaining to waste tire reuse, recycling, diversion, and disposal in California. In 1990, CIWMB staff estimated that 11.3 million of the 33.8 million California waste tires generated were diverted from landfill disposal and stockpiling (34 percent). In 2005, staff estimated that 30.6 million of the 40.8 million California tires generated were diverted from the annual waste stream (75 percent).

**Table 1: California Waste Tire Generation, Diversion, and Disposal, 2005**  
(Numbers except for diversion percent in millions of passenger tire equivalents<sup>1</sup>)

A	B	C	D	E	F	G	H	I	J		K	L	M	N
Generated A=L+M	Reused	Crumb Rubber	RAC	Civil Engin. Applic.	Alternative Daily Cover	Recycling and Other Uses <sup>2</sup>	Retreads <sup>3</sup>	Exported	TDF		Imported	Diverted <sup>7</sup>	Disposed Of <sup>8</sup>	Diversion Percent <sup>9</sup>
									Cogen- eration <sup>4</sup>	Cement <sup>5</sup>				
40.8	1.2	3.2	2.0	2.0	4.7	3.2	4.4	2.3	1.7	7.4	1.5	30.6	10.2	75 %

<sup>1</sup> Based on an average weight of 20 pounds per passenger car waste tire. One passenger car waste tire generates 12 pounds of crumb rubber.

<sup>2</sup> "Recycling and Other Uses" includes tires used in ground rubber products and other products made from waste tires. It does not include tire buffings from retreading operations because buffings are accounted for in the "Retreaded Tires" category. However, tire buffings are recycled. Therefore, the number of waste tires recycled is greater than shown here.

<sup>3</sup> Retreaded tires are mainly medium- and light-truck tires. CIWMB staff used an average weight of 120 pounds per retreaded tire.

<sup>4</sup> Represents the number of tires combusted in power plants primarily from the annual waste tire stream, but may also include some stockpiled tires from site cleanups.

<sup>5</sup> Represents the number of tires combusted as fuel supplement in cement kilns, primarily from the annual waste tire stream, but may also include some stockpiled tires from site cleanups.

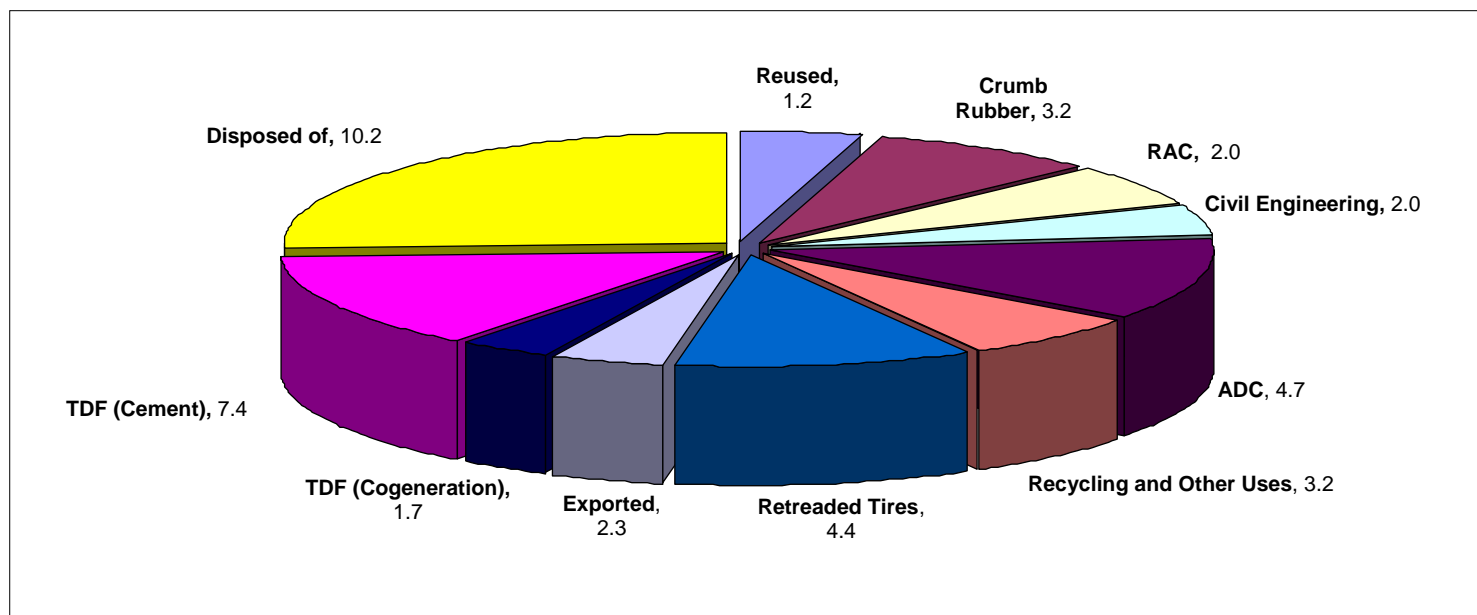
<sup>6</sup> Includes tires imported for combustion as fuel supplement or used to generate crumb rubber.

<sup>7</sup> Determined by summing Columns B, C, D, E, F, G, H, I, J, and K, and then subtracting Column K twice.

<sup>8</sup> Determined by summing the number of tires disposed of at landfills and mono-fills, primarily from the annual waste stream.

<sup>9</sup> Represents the percentage of waste tires diverted primarily from the California-generated annual waste stream.

**Figure A: Estimated Reusable and Waste Tire Recycling and Disposal, 2005**  
(Numbers in millions of passenger tire equivalents)





# Appendix D: Waste Tire Recycling Management Program's Publications

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Listed below, in alphabetical order, are publications produced by or for the California Integrated Waste Management Board regarding various aspects of managing waste and used tires in California. You may download or order these publications at [www.ciwmb.ca.gov/Publications/](http://www.ciwmb.ca.gov/Publications/) or by calling (916) 341-6306 or (800) 229-2783 (California only).

***1997 RAC and Crumb Rubber Products Workshop***

**Date Published/Last Revised:** May 23rd and May 30th 1997

**Publication Type:** Program/Workshop Information

**Description:** This workshop provided participants with the information needed for making sound decisions regarding the purchase of products containing crumb rubber.

**CIWMB Publication Number:** Not Available

***An Analysis of Subsidies and Other Options to Expand the Productive End Use of Scrap Tires in California***

**Date Published/Last Revised:** November 2002

**Publication Type:** Report

**Description:** 87 page(s). Summarizes the history of California's waste tire management legislation, disposal, and recycling activities, and presents ways to recycle more tires through market intervention subsidies. Includes survey of tire recycling programs in 11 other states and British Columbia, Canada. The report was commissioned by the California Integrated Waste Management Board.

**CIWMB Publication Number:** 620-02-006

***Analysis of Emissions Test Results and Residual By-products from Facilities Using Tires as a Fuel Supplement***

**Date Published/Last Revised:** October 1997

**Publication Type:** Report

**Description:** The objective of this analysis was to compare the differences in air emissions from industrial processes operating with and without tires as a fuel supplement. The goal of this analysis is to assess (in a quantifiable manner) the potential for changes in air emissions when using tire-derived fuel and its potential impact on air quality and health risk.

**CIWMB Publication Number:** Not available. Other information: Contract No. IWM-C5064.

***Ash Quantification and Characterization Study--Co-firing and Dedicated Combustion of Waste Tires***

**Date Published/Last Revised:** January 1995

**Publication Type:** Report

**Description:** 79 page(s). Evaluation of ash from waste tire combustion for use in road construction applications.

**CIWMB Publication Number:** Not Available

***Assessment of Markets for Fiber and Steel Produced From Recycling Waste Tires***

**Date Published/Last Revised:** August 2003

**Publication Type:** Report

**Description:** 182 page(s). CIWMB report defining the status of recycling of tire-derived steel and fiber and performing an in-depth analysis of issues related to marketability of these materials. Background data and information were collected from waste tire processors, the tire industry, and the marketplace. Evaluation of information resulted in numerous findings and recommendations.

**CIWMB Publication Number:** 622-03-010

***California's Waste Tire Challenge***

**Date Published/Last Revised:** Revised April 2003

**Publication Type:** Fact sheet

**Description:** 4 page(s). Overview of California's tire problems and the CIWMB's tire programs (recycling as well as permitting and enforcement and cleanup), with staff contacts for each program.

**CIWMB Publication Number:** 400-94-012

***California Waste Tire Generation, Markets, and Disposal: 2002 Staff Report***

**Date Published/Last Revised:** October 2003

**Publication Type:** Report

**Description:** 11 page(s). This report provides estimates of reusable and waste tire generation, consumption, and disposal in California for 2002.

**CIWMB Publication Number:** 620-03-015

***California Waste Tire Generation, Markets, and Disposal: 2003 Staff Report***

**Date Published/Last Revised:** June 2005

**Publication Type:** Fact sheet

**Description:** 5 page(s). This report provides estimates of reusable and waste tire generation, consumption, and disposal in California for 2003.

**CIWMB Publication Number:** 620-05-007

***California Waste Tire Generation, Markets and Disposal: 2004 Staff Report***

**Date Published/Last Revised:** May 2006

**Publication Type:** Report

**Description:** 4 page(s). This report provides estimates of reusable and waste tire generation, consumption, and disposal in California for 2004.

**CIWMB Publication Number:** 620-06-001

***California Waste Tire Generation, Markets, and Disposal: 2005 Staff Report***

**Date Published/Last Revised:** November 2006

**Publication Type:** Fact sheet

**Description:** 5 page(s). This report provides estimates of reusable and waste tire generation, consumption, and disposal in California for 2005.

**CIWMB Publication Number:** 620-06-017

***California Waste Tire Program Evaluation and Recommendations: Final Report***

**Date Published/Last Revised:** June 1999

**Publication Type:** Report

**Description:** 102 page(s). As required by statute, a report to the Governor and the Legislature examining the status of waste tires in California, as well as programs needed to provide sustainable end uses for the tires generated in the state and reduce existing waste tire stockpiles.

**CIWMB Publication Number:** 540-99-006

***Comprehensive Trip Log Guidance Manual***

**Date Published/Last Revised:** August 2005

**Publication Type:** Guidance manual

**Description:** 27 page(s). This guidance manual provides practical, step-by-step instructions for waste tire generators, haulers, and end use facilities on complying with requirements of CIWMB's waste tire manifest system. Topics covered include: background information, specific responsibilities, how to fill out the Comprehensive Trip Log form, FAQs, and electronic data transfer. (To order Spanish version in hard copy, call (916)341-6306.) Describa los papeles y responsabilidades de los involucrados en la generación, el transporte, y la entrega o la disposición de llantas de desecho en California.

**CIWMB Publication Number:** 623-05-003

***Consumers' Tire-Buying Habits and Their Knowledge of Tire Maintenance, Recycling, and Disposal***

**Date Published/Last Revised:** November 2003

**Publication Type:** Report

**Description:** 182 page(s). Presents survey data on tire purchasing habits of consumers in California and consumers' general knowledge about tires, tire maintenance, recycling, and disposal. Study funded by the California Integrated Waste Management Board.

**CIWMB Publication Number:** 622-03-004

***Criteria Pollutant Tests During the TDF Trial Burn at Stockton Cogen, Inc. (Final Report—1997)***

**Date Published/Last Revised:** September 1997

**Publication Type:** Report

**Description:** Air Products and Chemicals, Inc. performed a trial burn of tire derived fuel (TDF) blended with coal and coke at the Stockton Cogen, Inc. plant located in Stockton, California. The project was partially funded by the California Integrated Waste Management Board of the California EPA (CIWMB) to determine the feasibility of using TDF as a supplementary fuel in fluidized-bed boilers. The trial burn program included sampling and analysis of the fuel and other commodities added to the boiler, of the ash produced by the boiler, and of the stack emissions.

**CIWMB Publication Number:** Not available.

***Designing Building Products Made With Recycled Tires***

**Date Published/Last Revised:** June 2004

**Publication Type:** Report

**Description:** 24 page(s). Provides technical information on physical tire properties for designers of buildings who use tire-derived products. Includes cross-section illustration of a tire and appendix listing tire-derived building and landscape products.

**CIWMB Publication Number:** 433-04-008

***Don't Waste Tires!***

**Date Published/Last Revised:** October 2003

**Publication Type:** Fact sheet

**Description:** 2 page(s). Fact sheet provides tips on tire maintenance, encourages use of tire-derived products and retreaded tires, and promotes the reuse or recycling of tires.

**CIWMB Publication Number:** 620-03-014

***Effects of Waste Tires, Waste Tire Facilities, and Waste Tire Projects on the Environment***

**Date Published/Last Revised:** April 1996

**Publication Type:** Report

**Description:** 82 page(s). An outline (through available literature) of the conditions in which waste tires, waste tire facilities, and waste tire projects would create adverse effects on the environment. Attachments are not currently available with downloadable version.

**CIWMB Publication Number:** 432-96-029

***Environmental Factors of Waste Tire Pyrolysis, Gasification, and Liquefaction***

**Date Published/Last Revised:** July 1995

**Publication Type:** Report

**Description:** Pyrolysis, gasification, and liquefaction (PGL) are three related technologies that could potentially recover usable resources (i.e. energy, chemical feedstocks, steel, and fiber) from waste tires. Tire PGL would also reduce the volume of residue material remaining for disposal; thus, the California Integrated Waste Management Board (CIWMB) wished to study tire PGL as a waste tire management strategy. This report serves as background for assessing PGL in terms of the environmental consequences of the technologies.

**CIWMB Publication Number:** Not available. Other information: CalRecovery Report No.1364.

***Evaluation of Waste Tire Devulcanization Technologies***

**Date Published/Last Revised:** December 2004

**Publication Type:** Report

**Description:** 99 page(s). Survey of chemical, ultrasonic, microwave, biological, and other tire devulcanization technologies now in use. Covers cost, market, and environmental analysis and barriers to devulcanization. Published by the California Integrated Waste Management Board.

**CIWMB Publication Number:** 622-04-008

***Five-Year Plan for the Waste Tire Recycling Management Program: Fiscal Years 2001/02–05/06***

**Date Published/Last Revised:** September 2001

**Publication Type:** Report

**Description:** 54 page(s). The California Integrated Waste Management Board is required to adopt a five-year plan establishing goals and priorities for the waste tire program. This plan includes programmatic and fiscal issues as well as performance objectives and measurement criteria for the waste tire recycling program. The plan is to be revised and resubmitted to the State Legislature every two years.

**CIWMB Publication Number:** 620-01-004

***Five-Year Plan for the Waste Tire Recycling Management Program: Fiscal Years 2003/04--07/08***

**Date Published/Last Revised:** July 2003

**Publication Type:** Report

**Description:** 75 page(s). Second edition of five-year plan the CIWMB is required to adopt establishing goals and priorities for its waste tire recycling management program. The plan includes programmatic and fiscal issues as well as performance objectives and measurement criteria for the tire program. The plan is to be revised and resubmitted to the State Legislature every two years.

**CIWMB Publication Number:** 620-03-007

***Five-Year Plan for the Waste Tire Recycling Management Program: Fiscal Years 2005/06-09/10, Report to the Legislature***

**Date Published/Last Revised:** July 2005

**Publication Type:** Report

**Description:** 76 page(s). Third edition of five-year plan the California Integrated Waste Management Board is required to adopt establishing goals and priorities for its waste tire recycling management program. The plan includes programmatic and fiscal issues as well as performance objectives and measurement criteria for the tire program. The plan is to be revised and resubmitted to the State Legislature every two years.

**CIWMB Publication Number:** 620-05-005

***Increasing the Recycled Content in New Tires***

**Date Published/Last Revised:** May 2004

**Publication Type:** Report

**Description:** 93 page(s). The California Integrated Waste Management Board's five-year tire plan allocated funds to research increasing the recycled content in new tires in an effort to further reduce the number of waste tires requiring disposal. This report examines the potential for increasing recycled content, addressing technology and market issues, what barriers exist, and what has been done to date on this subject. Report recommendations were presented at CIWMB's May 2004 Board meeting.

**CIWMB Publication Number:** 622-04-001

***LEA Advisory #46: Evaluation of Employee Health Risk From Open Tire Burning***

**Date Published/Last Revised:** November 1997

**Publication Type:** Information advisory

**Description:** 8 page(s). Provides guidance on safety issues for employees working near burning tires.

**CIWMB Publication Number:** 232-97-019

***Market Status Report: Waste Tires***

**Date Published/Last Revised:** October 1996

**Publication Type:** Report

**Description:** 6 page(s). One of a series of reports that examine market barriers to recycling post consumer materials and strategies to overcome these barriers. These reports were produced in conjunction with the market development plan, "Meeting the 50 Percent Challenge: Recycling Market Development Strategies Through the Year 2000."

**CIWMB Publication Number:** 421-96-067

***New Uses for Old Tires: Options to Reduce Waste and Stretch Public Works Dollars***

**Date Published/Last Revised:** July 2002

**Publication Type:** Case study

**Description:** 12 page(s). Describes practical applications for using tires in local public works projects, with examples given for communities in California and Maine. Includes cost-benefit analyses. One of 24 studies showcasing successful recycling and waste reduction programs developed by local and regional government to achieve California's 50 percent waste diversion goals. The studies were developed with the support of the California Integrated Waste Management Board.

**CIWMB Publication Number:** 310-02-010

***Overview Report on California's Waste Tire Program***

**Date Published/Last Revised:** September 1998

**Publication Type:** Report

**Description:** 14 page(s). Includes a summary of the CIWMB's accomplishments in implementing the California Tire Recycling Act and an analysis of expenditures from the California Tire Recycling Management Fund from 1990/91 through 1997/98.

**CIWMB Publication Number:** 540-98-007

***Second Biennial Tire Recycling Conference (5/95)***

**Date Published/Last Revised:** June 1995

**Publication Type:** Conference proceedings

**Description:** 150 page(s). Complete proceedings of the conference, including such topics as market development, tires as fuel, rubberized asphalt, local government issues, waste tire facility permit and remediation program, new technologies, waste tire hauler registration program, and tire recycling outlook.

**CIWMB Publication Number:** 432-96-073

***Shredded Tires as Alternative Daily Cover at Municipal Solid Waste Landfills***

**Date Published/Last Revised:** October 1997

**Publication Type:** Guidance manual

**Description:** 35 page(s). A summary of recommended procedures for use of tire shreds as alternative daily cover at municipal solid waste landfills.

**CIWMB Publication Number:** 212-97-024

***Technology Evaluation and Economic Analysis of Waste Tire Pyrolysis, Gasification, and Liquefaction***

**Date Published/Last Revised:** March 2006

**Publication Type:** Report

**Description:** 103 page(s). The report presents results of a survey of pyrolysis, gasification, and liquefaction facilities worldwide as a viable alternative for the processing of scrap tires into energy sources.

**CIWMB Publication Number:** 620-06-004

### ***Tire Facilities***

**Date Published/Last Revised:** Updated September 1999

**Publication Type:** Compendium

**Description:** 74 page(s). Information from Solid Waste Information System (SWIS) database--includes name of facility; county; geographical location; names, addresses and phone for enforcement agency, operator/business owner, and land owner; classification, category, activity, regulatory status, and operational status. On-line database is searchable and updated regularly.

**CIWMB Publication Number:** 251-97-021

### ***Tire Fire Smoke: Major Constituents and Potential for Public Health Impacts***

**Date Published/Last Revised:** May 2002

**Publication Type:** Report

**Description:** This report is prepared in response to a mandate from the California State Legislature. SB 876 (statutes 2000, chaptered 2000; Public Resources Code, Chapter 838) requires "...preparation of a report by the Office of Environmental Health Hazard Assessment in consultation with the State Air Resources Board, the Integrated Waste Management Board, and the State Department of Health that includes, at a minimum, the major chemical constituents of smoke from burning tires, the toxicity of those chemicals, and the potential effects on human health from exposure to smoke from the tire fires. The report shall be submitted to the Governor, the Legislature and the board by December 21, 2001" (SB-876). The report addresses the risk from airborne toxicants and not issues associated with the cleanup of a site after the tire fire is extinguished, such as potential ground water contamination from site runoff.

**CIWMB Publication Number:** Not Available

### ***Tire Recycling Program 1995 Annual Report***

**Date Published/Last Revised:** May 1996

**Publication Type:** Report

**Description:** 14 page(s). Annual report on the CIWMB's tire recycling programs. Includes information on tire generation, consumption, and disposal in California; grant program awards and projects; and other activities such as tire facility and hauler registration, public education, and marketing and technical research.

**CIWMB Publication Number:** 432-96-042

### ***Tire Recycling Program Annual Report, 1994***

**Date Published/Last Revised:** May 1995

**Publication Type:** Report

**Description:** 16 page(s). Fulfills reporting requirements of Public Resources Code section 42885 on used tire program. Includes estimates of generation, consumption, and disposal, information on waste tire facility regulation, and hauler registration as well as business development, research, grants, and public education.

**CIWMB Publication Number:** 432-95-007

### ***Tire Recycling Program Evaluation***

**Date Published/Last Revised:** January 1997

**Publication Type:** Report

**Description:** 17 page(s). This report, required by the Supplemental Report of the 1996 Budget Act, provides results of all grants, loans, and contracts completed in the most recent fiscal year, including the resulting diversion of waste tires from landfills and stockpiles. It also identifies the kinds of activities that have been particularly effective for achieving diversion.

**CIWMB Publication Number:** 432-97-002



***Tire Shreds as Final Cover Foundation Layer Material at Municipal Solid Waste Landfills***

**Date Published/Last Revised:** December 1998

**Publication Type:** Guidance manual

**Description:** 38 page(s). Provides a summary of recommended procedures for use of tire shreds as final cover system foundation layer material at municipal solid waste landfills.

**CIWMB Publication Number:** 212-98-002

***Tire Shreds as Gas Collection Material at Municipal Solid Waste Landfills***

**Date Published/Last Revised:** December 1998

**Publication Type:** Guidance manual

**Description:** 40 page(s). Provides a summary of recommended procedures for using tire shreds as landfill gas (LFG) collection material at municipal solid waste landfills, including horizontal LFG collection layers, horizontal trenches, and vertical boreholes.

**CIWMB Publication Number:** 212-99-006

***Tire Shreds as Leachate Drainage Material at Municipal Solid Waste Landfills***

**Date Published/Last Revised:** December 1998

**Publication Type:** Guidance manual

**Description:** 36 page(s). Provides a summary of recommended procedures for using tire shreds as landfill leachate drainage material, including leachate injection pits within the waste mass, at municipal solid waste landfills.

**CIWMB Publication Number:** 212-99-005

***Tire Shreds as Operations Layer Material at Municipal Solid Waste Landfills***

**Date Published/Last Revised:** December 1998

**Publication Type:** Guidance manual

**Description:** 33 page(s). Provides a summary of recommended procedures for using tire shreds as operations (protective) layer material at municipal solid waste landfills.

**CIWMB Publication Number:** 212-99-007

***Tire Shreds: Solutions in Civil Engineering Applications***

**Date Published/Last Revised:** July 1999

**Publication Type:** Brochure

**Description:** 2 page(s). Informs civil engineers of opportunities to use tire shreds in place of other lightweight fill in projects such as roads, bridges, highway embankments, landslide stabilization, and landfill liners and caps.

**CIWMB Publication Number:** 212-99-004

***Tires as a Fuel Supplement: Feasibility Study***

**Date Published/Last Revised:** January 1992

**Publication Type:** Report

**Description:** 98 page(s). A report to the legislature on the feasibility of using waste tires as a fuel supplement for cement kilns, lumber operations, and other industrial processes. Prepared in cooperation with the California Air Resources Board and the California Energy Commission.

**CIWMB Publication Number:** 401-93-001

***Waste Tire Commercialization Grant Program: Abstracts and Status Updates, FY 1998/09 through 2003/04***

**Date Published/Last Revised:** December 2004

**Publication Type:** Report

**Description:** 45 page(s). Status report on the California Integrated Waste Management Board's tire product commercialization grant program. Includes a summary, covering fiscal years 1998-99 through 2003-04, describing grants made to businesses and public entities for activities that could expand markets for waste tire-derived products.

**CIWMB Publication Number:** 622-04-012

***Waste Tire Hauler Program NEWS-LINE, Winter 2003 Edition***

**Date Published/Last Revised:** January 2003

**Publication Type:** Newsletter

**Description:** 4 page(s). First issue of a quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to waste tire haulers in the state.

**CIWMB Publication Number:** 623-03-001

***Waste Tire Hauler Program NEWS-LINE, Summer 2003 Edition***

**Date Published/Last Revised:** July 2003

**Publication Type:** Newsletter

**Description:** 4 page(s). Summer 2003 edition of the quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to California's waste tire haulers.

**CIWMB Publication Number:** 623-03-005

***Waste Tire Hauler Program NEWS-LINE, Fall 2003 Edition***

**Date Published/Last Revised:** September 2003

**Publication Type:** Newsletter

**Description:** 4 page(s). Fall 2003 edition of the quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to California's waste tire haulers.

**CIWMB Publication Number:** 623-03-013

***Waste Tire Hauler Program NEWS-LINE, Winter 2004 Edition***

**Date Published/Last Revised:** January 2004

**Publication Type:** Newsletter

**Description:** 4 page(s). Winter 2004 edition of the quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to California's waste tire haulers.

**CIWMB Publication Number:** 623-04-002

***Waste Tire Hauler Program NEWS-LINE, Spring 2004 Edition***

**Date Published/Last Revised:** April 2004

**Publication Type:** Newsletter

**Description:** 4 page(s). Spring 2004 edition of the quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to California's waste tire haulers.

**CIWMB Publication Number:** 623-04-006

***Waste Tire Hauler Program NEWS-LINE, Summer 2004 Edition***

**Date Published/Last Revised:** August 2004

**Publication Type:** Newsletter

**Description:** 4 page(s). Summer 2004 edition of the quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to California's waste tire haulers.

**CIWMB Publication Number:** 623-04-009

***Waste Tire Hauler Program NEWS-LINE, Winter 2005 Edition***

**Date Published/Last Revised:** December 2004

**Publication Type:** Newsletter

**Description:** 4 page(s). Winter 2005 edition of the quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to California's waste tire haulers.

**CIWMB Publication Number:** 623-04-011

***Waste Tire Hauler Program NEWS-LINE, Summer 2005 Edition***

**Date Published/Last Revised:** June 2005

**Publication Type:** Newsletter

**Description:** 4 page(s). Summer 2005 edition of the quarterly newsletter from the California Integrated Waste Management Board's Waste Tire Hauler Program, geared to help circulate regulatory information to California's waste tire haulers.

**CIWMB Publication Number:** 623-05-006

***Waste Tire Hauler Program NEWS-LINE, Fall 2005 Edition***

**Date Published/Last Revised:** November 2005

**Publication Type:** Newsletter

**Description:** 4 page(s). Fall 2005 edition of the California Integrated Waste Management Board's newsletter for the state's waste tire haulers. Articles on customer representatives, new Comprehensive Trip Log form, and enforcement actions.

**CIWMB Publication Number:** 623-05-010

***Waste Tire Hauler Program NEWS-LINE, Summer 2006 Edition***

**Date Published/Last Revised:** July 2006

**Publication Type:** Newsletter

**Description:** 4 page(s). Summer 2006 issue of the California Integrated Waste Management Board newsletter for the state's waste tire haulers includes articles on common errors in the Comprehensive Trip Log form, workshops held for Mexican haulers transporting tires between the U.S. and Mexico, and a feature on an LA County local enforcement agent.

**CIWMB Publication Number:** 623-06-010

***Waste Tire Management Grant Abstracts: Fiscal Year 1998-99***

**Date Published/Last Revised:** June 2002

**Publication Type:** Report

**Description:** 70 page(s). Summarizes 58 waste tire grants awarded by the CIWMB for FY 98-99 (totaling \$1,518,522.44) for playground cover/track surfacing, tire products promotion/processing, public education/amnesty, enforcement, and cleanup projects. Summaries include project results, final amount paid, and contact information. Project results monitor the success of waste tire management alternatives and practices and are the basis for further research and commercialization.

**CIWMB Publication Number:** 622-02-003

***Waste Tire Management in California***

**Date Published/Last Revised:** January 1997

**Publication Type:** Fact sheet

**Description:** 1 page(s). Brief description of waste tire management programs at the IWMB, including recycling (financial assistance, marketing research, and technical assistance) and permitting and enforcement (safe handling and disposal and site cleanup).

**CIWMB Publication Number:** 432-97-007

***Waste Tire Management Program: 1999 Annual Report***

**Date Published/Last Revised:** October 2000

**Publication Type:** Report

**Description:** 22 page(s). This report provides an overview of California's waste tire program, including a summary of the Board's accomplishments in implementing the California Tire Recycling Act during fiscal year 1998-99.

**CIWMB Publication Number:** 620-00-006

***Waste Tire Management Program: 2000 Annual Report***

**Date Published/Last Revised:** July 2001

**Publication Type:** Report

**Description:** 29 page(s). An overview of California's waste tire program, including a summary of the California Integrated Waste Management Board's accomplishments in implementing the California Tire Recycling Act during fiscal year 1999/2000.

**CIWMB Publication Number:** 620-01-006

***Waste Tire Management Program: 2001 Staff Report***

**Date Published/Last Revised:** May 2003

**Publication Type:** Report

**Description:** 21 page(s). This report provides an overview of California's waste tire program, including information on markets for waste tires and permitting, enforcement, and hauler registration programs. Also includes the CIWMB's accomplishments in implementing the California Tire Recycling Act during fiscal year 2000/01.

**CIWMB Publication Number:** 620-03-003

***Waste Tire Manifest System Guidance Manual***

**Date Published/Last Revised:** May 2003

**Publication Type:** Guidance manual

**Description:** 72 page(s). This guidance manual provides practical, step-by-step instructions for waste tire generators, haulers, and end use facilities on complying with the new CIWMB waste tire manifesting requirements that become effective July 1, 2003. Topics covered include: background information, specific responsibilities, how to fill-out the forms, instructions for different business scenarios, FAQs, and much more.

**CIWMB Publication Number:** 623-03-002

# Appendix E: Compilation of Border Activities listed in the Five-Year Plan

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This appendix provides a complete listing of border activities contained in the Five-Year Plan.

## **Enforcement Element – Waste Tire Enforcement Support Activities, Page 11:**

CHP Agreement to Support Enforcement Activities

Satellite Surveillance Project

ARB Surveillance Assistance

Training Support for Waste Tire Inspectors and Managers

Analysis of Targeted Study Areas for Waste Tire Enforcement

*These activities total \$200,000 of the \$600,000 assigned to individual activities for FYs 2007/08-2011/12.*

## **Cleanup Element – Local Government Waste Tire Cleanup Grant Program, Page 18:**

Local Government Waste Tire Cleanup Grant Program – \$100,000 of the \$1,000,000 assigned to this program will be dedicated to grant applications proposing cleanups that occur along the California border region.

*This activity totals \$100,000 of the \$1,000,000 assigned to this activity for FYs 2007/08-2011/12.*

## **Research Element, Page 24:**

### **Study to Examine Options for Addressing Flow of Used and Waste Tires from California and Mexico:**

Mexico imports used tires from California that have a very short lifespan. Many of these imported tires are illegally disposed of and may cause environmental hazards. Illegally disposed of tires on the Mexican side of the border have caused environmental issues in California, e.g., tires entering the Tijuana Estuary and smoke from tire fires in Mexicali dispersing into Calexico. This study will examine a range of options to address these issues, assess impacts, and provide recommendations.

*This activity is funded in the amount of \$100,000 for FY 2007/08.*

## **Marketing Element, Page 32:**

**Border Program Activities:** Used and waste tires continue to flow into Mexico through border entries, and it is presumed that some of these same tires end up being illegally disposed along the border of California and Mexico. The waste tires that end up along the border regions of Mexico and California are either being dumped illegally at various sites or used inappropriately for structural purposes in or near the City of Tijuana, Mexico.

The U.S. EPA funded cleanup of waste tires sites near or along the California-Mexican Border last year. The CIWMB will continue to collaborate with U.S. EPA and the Border Task Force to help develop community outreach, additional training and technical support to Mexican Tire Haulers, and training for CHP Commercial Officers who work along the California-Mexico borders.

CIWMB will continue its participation with the Border 2012 Task Force, Resource Conservation Challenge Border Group, California Biodiversity Council, Biodiversity Along the Border Committee, and the 2008 Border Governors Conference to resolve the problems caused by illegally dumped waste tires along the border region. Also, the CIWMB has contracted with the City of San Diego Solid Waste Local Enforcement Agency to identify stakeholders, infrastructure, and problems associated with the waste tires washing back into the San Diego region from the Tijuana River. CIWMB and City of San Diego staff will participate in meetings with local and state government, and environmental officials from Mexico and California as well as with other stakeholders in tire industry of Mexico to address these issues. Other tasks of this contract will include assessment of Mexico's existing regulatory requirements regarding waste tires, and development of an Environmental Outreach Program to inform the border communities in Mexico of the health and safety issues associated with waste tires.

**Provide Technical Assistance for State of Baja California's Development of Integrated Waste Management Plans:**

In 2003, Mexico passed the Integrated Waste Management Law (IWM Law) to promote proper waste management practices for diverse waste streams and encourage reduction, reuse, and recycling of waste. In December 2006, Mexico passed regulations for the IWM Law, which included the management of waste tires. One of the activities required under the IWM Law was for states and municipalities to assess waste streams and develop a Waste Management Plan (WMP). The states, in this case, the State of Baja CA, will need to work with each of the municipalities to prepare waste management plans and provide technical assistance. The purpose of this effort is to provide the State of Baja CA with technical assistance regarding waste tire management practices at the municipal level, which ultimately would benefit the border region and assist in minimizing environmental impacts to California. Technical assistance would include providing information regarding enforcement techniques, remediation programs, alternative uses for tires, marketing assistance, and tracking the flow of tires in Mexico.

Providing technical assistance to Mexico regarding its waste tire management plan, which identifies institutional needs, will help Baja California create an infrastructure that will benefit both California and Mexico. This effort will leverage the knowledge and experience of local, state and federal agencies from both sides of the border to develop a model plan for managing waste tires in Mexico. This project will work towards reducing illegal dumping of waste tires, and promote waste reduction, reuse, and recycling.

Specific tasks include:

- Participating in scoping meetings with the State of Baja CA, and the municipalities of Tijuana, Mexicali, Rosarito and Ensenada, the Mexican Environmental Ministry, and other interested stakeholders to define potential waste tire management priorities;
- Working with industry partners to identify problem areas and needs for the proper management of wastes tires in compliance with the IWM Law and other local/ state requirements; and
- Provide technical assistance for Mexican State's Development of model waste tire management plan.

*This activity is funded in the amount of \$20,000 per fiscal years 2007/08-2011/12.*

**Sharing of Environmental Education Materials Throughout the Border Region:**

SB 772 requires CIWMB to work with Mexico in areas relating to waste and used tires, and environmental education and training. In coordination with the Office of the Secretary for Environmental Protection-Border Affairs and the CIWMB's Office of Education and the Environment, the Tire Program will develop a mechanism with Mexico's Secretariat for Public Education (SEP), Baja California's Secretaría de Protección Ambiental, and the Baja California's Education System (SEBS-ISEP) allowing for bi-national distribution of the Cal/EPA-CIWMB's environmental education curriculum entitled "Conservation and Pollution Prevention at a Shared Border". This elementary school curriculum includes lessons that are relevant to prevalent border conditions (e.g., land, water, and air pollution) and is consistent with existing environmental education and training principles in Mexico. Both English and Spanish versions of the curriculum will be provided to border teachers, educators, and schools. This curriculum contains scientific and resource-based lessons regarding the border area, with key steps toward environmental sustainability. The goal is to reach out to a minimum of 12,000 teachers and educators during 2008, which will impact school districts on both sides of the border.

The reproduction of the curriculum was funded from unused FY 2006/07 tire funding. Distribution of the curriculum will occur through a Cal/EPA-CIWMB/Mexico mechanism/work plan, with participation by the general public, local government on both sides of the border, during fiscal years 2007/08 and 2008/09.

*This activity is funded in the amount of \$20,000 per fiscal years 2007/08-2008/09 and 2010/11-2011/12 and \$50,000 for fiscal year 2009/10.*



**Hauler Element, Page 39:**

Provide training and technical support to the Mexican Tire Haulers which would include waste tire hauler permit requirements, hauler check-point participation, and referral of locations where waste tires are being illegally dumped.

*These activities total \$10,000 of the \$450,000 assigned to the Hauler Program and Manifesting activity for FYs 2007/08-2011/12.*

**Border Table: Budget for Border Programs Contained in the Five-Year Plan**

<b>Program Area</b>	<b>FY 2007/08</b>	<b>FY 2008/09</b>	<b>FY 2009/10</b>	<b>FY 2010/11</b>	<b>FY 2011/12</b>
Waste Tire Enforcement Support Activities	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Local Gov't Waste Tire Cleanup Grant Program	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Study to Examine Options for Addressing Flow of Used and Waste Tires from California and Mexico	\$100,000	\$0	\$0	\$0	\$0
Providing Technical Assistance	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Sharing of Environmental Education Material	\$20,000	\$20,000	\$50,000	\$20,000	\$20,000
Hauler Program and Manifesting	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
<b>Grand Total</b>	<b>\$450,000</b>	<b>\$350,000</b>	<b>\$380,000</b>	<b>\$350,000</b>	<b>\$350,000</b>